

LEGITIMACY, PROCEDURAL JUSTICE and POLICE-CITIZEN ENCOUNTERS:

A Randomized Controlled Trial of the Impact of Procedural Justice on Citizen

Perceptions of the Police during Traffic Stops in Turkey

by

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ABSTRACT OF THE DISSERTATION

Legitimacy, Procedural Justice, and Police-Citizen Encounters: A Randomized Controlled Trial of the Impact of Procedural Justice on Citizen Perceptions of the Police during Traffic Stops in Turkey

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Police citizen encounters constitute the most basic aspect of policing, and the nature of these contacts has a subsequent influence on the perceptions of police legitimacy. The relevant literature on police legitimacy and procedural justice suggests that when police actions during police citizen interactions are perceived as procedurally just, citizens view the police as legitimate and more likely to consent to their decisions (Sunshine & Tyler, 2003; Tyler & Fagan, 2008). Therefore, procedurally just policing could help police departments to foster voluntary deference, and that may impact citizen satisfaction at the same time.

There is increasing scholarly interest in the topic of appropriate police conduct, procedural justice, legitimacy and police-citizen encounters. However, until very recently, there have been limited numbers of well-designed empirical research studies on these topics. From this perspective, this dissertation attempted to assess whether incorporating procedural justice principles into Turkish National Police stops would affect citizens' views of the police, and a rigorous randomized controlled trial was

conducted in Turkey for this purpose. A total of 702 drivers who were stopped by the Adana Police Department for speeding violations were randomly assigned to either the control or the treatment group. Subjects in the experimental group received the procedural justice policing intervention during these traffic stops, while subjects in the control group experienced business-as-usual traffic stops. The results of this study suggest that the perceptions of police in relation to the traffic stop encounters were influenced by the way in which police interacted with the citizens. Drivers who experienced the procedurally just traffic encounters reported improved perceptions of the police in relation to the encounters than citizens who experience routine traffic enforcement procedures. Furthermore, the drivers who took part in the experimental condition reported higher levels of satisfaction with their police treatment. However, the results indicated that a single procedurally just encounter does not have a striking impact on driver's general views of the police.

The findings of this research could be used to improve the interaction between police and citizens in Turkey. Additionally, the study may also generate new ideas for practitioners on how to behave towards drivers during traffic stops.

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Dedication

Dedicated to my love, Elif,
and my wonderful children Neva and Murat.

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CHAPTER 1: INTRODUCTION

In recent decades, the quality of policing in the United States and developed countries has improved considerably. The police in the 21st century are more effective in controlling crime, better educated, more professional and less likely to engage in misconduct when compared with past generation of officers (Braga & Weisburd, 2010; Skogan & Frydl, 2004; Weisburd & Braga, 2006). Despite the behavioral and technological improvements in policing in the 21st century, some persistent problems remain that need to be addressed by the police. In some communities and countries, police-community relations are still strained due to unfair, overly aggressive, discriminating and disrespectful police practices.

The available research evidence on police legitimacy suggests that the effects of such policing practices have an influence on compliance and cooperation with the police (Sunshine & Tyler, 2003). There is increasing scholarly interest in appropriate police conduct, procedural justice, legitimacy and police-citizen encounters. However, until very recently, there are limited numbers of scientifically strong studies and empirical research evidence on these topics (Braga & Weisburd, 2010). In response to the need for more rigorous evaluations of police interventions, this study developed a rigorous randomized controlled trial in Turkey to determine whether incorporating procedural justice principles into how Turkish National Police handle stops affects citizens' views on the police immediately following the stops.

1.1 Statement of the Problem

Policing is one of the main pillars of work in public services, and for many citizens, police officers represent the most visible face of government. While police do provide important services to the public, some police actions and behaviors cause community members to hold negative perceptions of the police. The available research suggests that people develop negative perceptions of police when subjected to racial profiling, disrespectful, overly aggressive and unfair policing (Gau & Brunson, 2010; Stoutland, 2001; Sunshine & Tyler, 2003).

In some countries, traffic enforcement can be regarded as one of the most problematic and challenging assignments for police forces. Radelet and Carter (1999) argue that the “biggest conflict between the police and the public occurs in the enforcement of traffic laws” (p.195). Depending on the cultural motivations and individual reasoning, some citizens or police officers may see enforcing traffic laws as an unnecessary time consuming task. Drivers may not recognize the life-saving benefits of traffic enforcement in the short term (Brandt & Mulligan, 2003). They may believe that rather than spending their time on minor or non-violent offenses such as traffic citations, police should focus on serious crimes such as homicide investigation or terrorism. Radelet and Carter (1999) state that when police enforce parking regulations, citizens tend to criticize them by saying “the cops must not be busy enough if they have time to write parking tickets” (p.194). Due to the mentioned “unpopularity” of traffic enforcement, some police departments tend to allocate very limited resources to traffic controls (Dix & Layzell, 1983, p.9). When perceived inappropriate demeanor, racial profiling, injustices involving biased decision making and disrespectful policing practices

are also added into this equation, many disputes and interaction problems may arise during traffic stops (Engel, 2005; Maxfield & Kelling, 2005; Southgate & Eckblom, 1986).

Turkish policing is not free of such problems. A recent survey in Turkey found that Turkish people are less satisfied from traffic enforcement, and the level of public trust to traffic police is lower than non-traffic police officers (Adaman, Carkoglu & Senatalar, 2009). Traffic police try to enhance public safety by preventing traffic accidents. As such, it is surprising that the Turkish public has less trust in the TNP's traffic units when compared with other police units in Turkey.

There is a perception that Turkish police conduct traffic stops with little attention to procedural justice concepts (Dönmezer, 1981; Kabukcu, 2006; Sahin, 2010). Some citizens hold the belief that social class and occupation of a person would have an influence on police officer's decision-making (Ozbaran, 2010; Cerrah, Cevik, Goksu, & Balcioglu, 2009). Due to lower levels of satisfaction and trust to TNP's traffic units, citizens tend not defer to police authority during traffic stops (Adaman et al., 2003). From this perspective, some factors that affect citizen perceptions of police in Turkey such as favoritism, corruption and disrespect can be listed as explanation for the lower levels of satisfaction and trust to the TNP's traffic units.

Several explanations could be listed to identify why negative attitudes toward the traffic units exist. First, the way officers exercise their discretion might affect public trust. Some studies in the United States found that traffic enforcement is a highly discretionary practice and leniency in sanctioning is common (Schafer & Mastrofski, 2005;

Lichtenberg, 2002; Moskos, 2008). Almost every driver routinely violates traffic rules, but when it comes to enforcement, it is the officer who makes the decision on which car to stop or what type of citation to issue to the driver. Along with the discretion heavily involved in traffic enforcement practices, there is no set of criteria regarding leniency that police officers apply when deciding to issue a traffic ticket (Lichtenberg, 2002).

Similar to their colleagues around the world, leniency in sanctioning is also common in Turkish traffic units and they have greater discretion on giving a traffic ticket or not. Turkish public also expect from police to be more lenient towards traffic offenses because these are minor offenses that could be “overlooked.” Thus, even if the drivers admitted to traffic law violations, they may expect the police to issue a verbal warning rather than a traffic ticket. If the police do not meet their expectations, they may criticize officer’s decision-making by arguing “they do not deserve what they got” and may view the decision as unfair.

Second, the perception of “biased” decision-making also generates negative feelings towards traffic police in Turkey. Some Turkish citizens believe that police officers are not fair to everyone (Yilmaz & Demirci, 2004). The Economy Policy Research Foundation of Turkey (TEPAV) survey provides further insight on citizen perceptions on police fairness (Adaman et al., 2009). TEPAV 2009 survey respondents were asked whether police are treating citizens equally while maintaining order and security. The respondents considered favoritism as prevalent (5.2 on the 10 point scale) in policing practices. Officers enforcing traffic rules can favor local residents, business owners, fellow officers, friends or acquaintances, relatives of another officer, ex-officers, medical doctors, taxi or bus drivers and government officials (Lichtenberg, 2002; Sahin,

2010). Similarly, in Turkey, there is a public perception that police favor some individuals who belong to certain positions or certain occupations. For instance, some argue that a luxury vehicle that belongs to a politician or affluent people is less likely to be stopped by the traffic police, whereas a middle class type of vehicles is more likely to be subjected to traffic stops (Ozbaran, 2010).

Third, corruption also has significant negative effects on public trust in political systems and public institutions (Hough, Jackson Bradford, Mayhill, & Quinton, 2010; Seligson, 2002). Police corruption has unpredictable effects on legitimacy of a police organization. Simply, a citizen would not trust a corrupt police department. Eventually, distrust between police and community would undermine police legitimacy. Trust to the government institutions is not consistent across Europe. Some of the European Union countries that have recently joined the organization have significant problems of corruption (Hough et al., 2010). As a candidate for membership to the European Union, corruption is also a significant issue that affects perceptions of police legitimacy in Turkey (Cao and Burton, 2005). TEPAV 2009 survey results support that argument, especially for traffic units. Survey respondents evaluated traffic police as highly corrupt (6.5 on the 10 point scale), yet only 8.8 percent of respondents admitted paying bribe to a traffic police. On the other hand, respondents opined that non-traffic police officers were less corrupt than traffic police officers (5.2 on the 10 point scale).

Finally, disrespectful policing is another key factor affecting public perceptions of police. The unfortunate reality is that the police are not polite and respectful to many citizens (Gau & Brunson, 2010). For instance, all too often, police tend to use aggressive and disrespectful policing practices in high-crime neighborhoods. Officers working in

such neighborhoods may believe that higher proportions of victimization in these areas are at least partially “deserved” because of the overlapping superficial characteristics of the victims and offenders. Likewise, officers might justify disrespectful behavior toward high crime neighborhood residents by arguing that some people just deserved to be treated that way (Mastrofski, Reisig & McCluskey, 2002; Moskos, 2008). The available literature suggests that police serving concentrated disadvantaged neighborhoods are more likely behave disrespectfully toward suspects than officers serving less disadvantaged neighborhoods (Gau & Brunson, 2010; Mastrofski et al., 2002; Skogan & Frydl, 2004).

Disrespectful policing practices are also a problem for the TNP. According to the Turkish police subculture, police should demonstrate their authority while interacting with the public. Being kind to all citizens is seen as a weakness and has not been embraced as a desired police demeanor. Some officers think that treating citizens respectfully would weaken and challenge their authority. However, this rationale conflicts with citizen expectations. Citizens are generally not aware of the motivations of officers, so they may perceive authoritarian and impolite police demeanor as an unfriendly attitude. Officer attitudes sometimes generate communication problems with citizens through their adherence to an overly authoritarian and distant law enforcement role. The attributions people make about police behavior may not reflect the real facts. However, if the public views their actions in this way, police should look for ways to better communicate with citizens. Indeed, disrespectful and impolite policing practices have been identified as an underlying factor that affects the credibility of traffic units in Turkey (Dönmezer, 1981; Kabukcu, 2006, p.70).

Consequently, it can be argued that lower levels of trust in TNP's traffic units might be the result of perceived biased, unjust, disrespectful and discriminatory policing practices. Some studies and public surveys indicate that despite higher levels of confidence in the police in Turkey, public do not trust some police units at same levels as others (Cao & Burton, 2005). Particularly, patrol and traffic units are one of the less trusted divisions of the force (Adaman et al., 2009). Therefore, in order to gain respect and better support from the public, Turkish police should find ways to restore the image of some of its units.

1.2 Purpose and Significance of the Study

Police-citizen partnerships are critically important element of police departments' efforts to fight against crime effectively (Skogan & Hartnett, 1997). Community policing has been widely adopted by many police departments across the United States (Weisburd & Braga, 2006). However, community-policing efforts are undermined when the community does not trust to the police. Thus, in order to gain support in their fight against crime and alleviate strains with the public, police departments need to pay more attention to one of the most basic aspects of policing, which is the police-citizen encounter. Recent studies on police legitimacy and procedural justice support the idea that these concepts play significant roles on police-citizen partnership, and promise achievable remedies for the problems between the public and the police (Davis, Mateu-Gelabert & Miller, 2005; Gau & Brunson, 2010; Sunshine & Tyler, 2003; Tyler, 2005).

From this perspective, this study aimed to test whether using the key elements of procedural justice during police-citizen encounters for traffic citations have an effect on citizens' perceptions of procedural fairness and their satisfaction with the police in

Turkey. Procedurally-just policing could help police departments gain voluntary deference and impact citizen satisfaction. The research aims to provide new communication tools to Turkish police to enhance and improve their interactions with the citizens they serve. Specifically, findings of this research could be used to improve the interaction between police and citizens during traffic stops in Turkey. At the same time, the study could also generate new ideas for practitioners on how to behave towards drivers during traffic stops to mitigate the distress due to a traffic ticket.

1.3 Contribution to the Existing Literature

The research would make a distinct contribution to the existing literature by testing the effect of procedural justice on citizen perceptions of procedural fairness and police legitimacy in Turkey. Previous research found that how police treat citizens has an effect on the citizen perceptions of police legitimacy, compliance with police instructions and cooperation with the police (Sunshine & Tyler, 2003; Tyler, 2006; Tyler & Huo, 2002). However, most of the previous studies on police legitimacy and procedural justice focused on the global level of police legitimacy. In other words, while testing the impact of procedural justice on police legitimacy, their focus was not on specific police units or specific police citizen encounters. This research offers a new perspective by considering different units and different types of encounters while also studying the effect of procedural justice on perceptions of police legitimacy and citizen satisfaction with police.

The study would also give us a new insight on and understanding of the effectiveness of procedurally-just policing in different cultures and communities. Most of the research on police legitimacy was conducted in English-speaking western countries

such as the United States, Canada or Britain (Hough et al., 2010). However, the legal system, organizational culture and history of police-citizen relations are different for police agencies across the world. As such, the question is whether process-based policing will ‘work’ in other countries? To answer this question, the study conducted an empirical test of procedural justice theory in Turkey.

Western societies are regarded as individualistic societies, whereas collectivism is a strong motivation in Turkish society (Cao & Burton, 2005). Leung (1987) stated, “collectivism refers to the tendency to be more concerned about the consequences of one's behavior for in-group members and to be more willing to sacrifice personal interests for the attainment of collective interests” (p.899). In addition, Cao and Zhao (2006) argue that unlike the United States and other developed western countries where people with lower income hold less favorable attitudes, people with higher income and education hold less favorable attitudes towards police in developing countries. Karakus, McGarrell and Basibuyuk (2011) found consistent findings with Cao and Zhao (2006) in their research on public satisfaction with law enforcement in Turkey. They note that citizens with higher socioeconomic status reported less satisfaction with law enforcement and hold less favorable attitudes. Thus, conducting a study in a different setting (in Turkey), could give us better insight about the impact of the procedural justice principles’ on perceptions of procedural fairness and police legitimacy in different cultures.

The research also shed a light on whether citizens’ perceptions on favoritism and injustices can be changed in short, high volume police-citizen encounters by applying procedural justice principles to traffic stops. Experiences of favoritism would erode

public trust to police. For instance, if members of the public noticed that police officers are favoring certain people such as fellow officers, friends or acquaintances by not giving them a traffic ticket, they would view these actions as unfair and lose trust in the police. By contrast, police would gain respect and trust by treating everyone the same (i.e. basing their ticketing decisions on behaviors rather than who someone may be). Procedural justice approach suggests that everyday-policing practices would have significant effects on citizen perceptions of police fairness, and police legitimacy can be enhanced by positive police-citizen interactions (Tyler, 2006).

The association between procedurally-just policing and citizen perceptions of police fairness has been tested by several previous studies (Mazerolle et al., 2012; Tyler, 2006; Tyler & Huo, 2002). However, previous studies did not directly test the link between procedurally-just policing and citizen perceptions of police fairness-neutrality. In other words, we do not have sufficient empirical evidence of whether following procedural justice principles in a short police-citizen encounter could change citizen perceptions of police fairness-neutrality. Testing that link in Turkey rather than a developed country could give us more compelling results, because some argue that injustices such as favoritism or corruption is more common in developing countries (Hough et al. 2010; Mutlu, 2000; Seligson, 2002).

CHAPTER 2: LITERATURE REVIEW

2.1 Legitimacy and Procedural Justice

Legitimacy is based on the idea that people tend to obey the rules or dictates that are imposed by an authority or institution, if they believe that these rules or regulations are “right” or “proper.” That is to say, in order to be seen as legitimate, the power of the institution should be limited through normative expectations and its power should be exercised according to justifiable rules (Beetham, 1991, p.38). According to Beetham (1991), an authority has legitimacy when “it conforms to established rules, the rules are morally justifiable and there is evidence of consent by the subordinate to the particular power relation” (p.16). If an authority or institution satisfies these elements, then, the people would hold the belief that it has the right to govern them and is “entitled to be obeyed” (Tyler, 2006).

Legitimacy is important because it has an influence on behavioral compliance. In his groundbreaking work, “Why people obey the law,” Tyler (2006) contributed to the legitimacy literature by providing empirical support for the effect of legitimacy on compliance as a motivating force. However, do people comply with the directives of an authority figure for other reasons? In his book, Tyler referred to two approaches of compliance: instrumental and normative.

The instrumental model is based on the assumption that rewards and punishments play a major role in governing people’s actions. This perspective suggests that self-interest shapes people’s choices. Based on this model, individuals are more concerned with seeking favorable outcomes from the legal and political system than unfavorable

outcomes. This model, which is rooted in the deterrence and rational choice theory, assumes that people can easily break rules when they feel that the incentive for doing so outweighs the potential sanctions (Tyler, 2006, p.22).

The second model is the normative model. This model suggests that there is a normative basis of public compliance to authority. According to this perspective people comply with the law because of an internal sense of obligation. Tom Tyler breaks normative compliance into two components: personal morality and legitimacy. In personal morality-based compliance, one obeys a law because he believes that the law is just. In legitimacy-based compliance, one obeys a law because he holds the belief that “the authority enforcing the law has the right to dictate behavior” (Tyler, 2006, p.4). In other words, the legitimacy-based explanation of compliance posits that people comply because they perceive the authority enforcing the law as entitled to dictate commands, make decisions, and give directives that are to be obeyed.

Tyler (2006) argues that producing compliance through the instrumental model is a costly strategy and relies on limited resources. As a consequence, it is difficult to implement such strategies in communities that cannot afford the social and fiscal costs of instrumental model (Hough et al., 2010). Aside from implementation costs and its dependence on resource limits, instrumentation strategies are not self-sustaining, difficult to implement during times of crises, and can only be maintained when there is a certain probability of detention (Tyler & Fagan, 2009, p.263). On the other hand, Tyler (2006) advocates that producing compliance through legitimacy is self-sustaining, more achievable and economically viable, when compared with instrumental strategies.

Similarly, Meares (2000) states “law enforcement gains could be achieved more cheaply than through more instrumental means simply by telling officers to ‘be nice’” (p.401).

As mentioned above, commitment through personal morality and legitimacy are both normative factors. However, this does not mean that they are identical. One of the differences between these two categories is the government’s role in their development. The government has a more direct control in generating perceptions of legitimacy, whereas the government has indirect control in development of personal morality. The development of an individual’s morality starts at an early age, so it is more associated with upbringing and parenting. Thus, securing compliance by generating legitimacy seems to be the most effective way for government in shaping public perceptions of the law and authority (Meares, 2000, p.399).

Given the fact that institutions can secure public obedience by generating legitimacy, it is important to understand how the public determines the legitimacy of an institution or authority (Tyler & Huo, 2002). For instance, what factors affect citizens’ assessment of the legitimacy of the police? Sunshine and Tyler (2003) note that outcome based police legitimacy relies on three types of citizen assessment: police performance in fighting crime, the success of police in apprehending criminals, and the distribution of fair outcomes (p.518). However, the procedural justice perspective offers an alternative approach by suggesting that fairness of the procedures or how the police treat people also have an influence on people’s assessment of the legitimacy of the police (Tyler, 2004, p.91).

Thibaut and Walker (1975) first introduced the concept of procedural justice by suggesting that fairness of the procedures also has a significant effect on overall satisfaction with the dispute resolution, independent of the outcome. In other words, both aspects, fairness of the outcome and utilization of fair processes to reach that outcome, have an impact on perceptions of fairness independent of each other (Tyler & Folger, 1980). Leventhal (1980) continued the work of Thibaut and Walker (1975) by proposing six criteria for a perceived fair procedure. He posited that procedures are evaluated by their consistency, bias suppression, accuracy, ethicality, correctability and representativeness (Tyler, 2006, p.118).

Tom Tyler further developed the procedural justice literature by applying the concept to different settings. Tyler (2006) noted that Thibaut and Walker examined procedural justice in courtroom settings in their studies. However, procedural justice could also be examined in citizen contacts with the police, which are considered as a less formal contact than a court setting. During interpersonal interactions and encounters with police, public observes police behavior and evaluate the fairness of police actions. According to Tyler's process-based policing model, the public pays attention to the manner in which police exercise its authority and whether police use fair procedures (Tyler & Fagan, 2009; Tyler, 2011). Tyler and Huo (2002) state, "the basic procedural justice argument is that people defer to decisions because those decisions are made thorough processes that they view as fair" (p.51). In essence, the procedural justice approach suggests that fairness in exercising authority and the quality of decision-making have an influence on public perceptions of police legitimacy.

In his Chicago study, Tyler (2006) combined the previously suggested fairness criteria of Thibaut and Walker with Leventhal's. He argued that the following three subjective criteria affect people's judgments of police fairness. First, people consider the quality of decision-making. This component of fairness includes perceived neutrality and application of rules consistently. Second, the quality of treatment also affects the citizen's perceptions of police fairness. This component includes being treated respectfully and politely, considering one's rights and views. Third, trustworthiness, which gives citizens the perception that police do "care" about them and are "acting out of benevolence" (Tyler & Wakslak, 2004, p.255).

At this point, one might ask, what are the advantages of a procedural justice approach over an instrumental approach. The answer lies within the nature of policing. In the eyes of public, the main police role is to control crime and be an effective crime fighter. However, the police may not be as effective as expected in controlling crime due to resource limitations, which hinders their crime control capabilities. Furthermore, police also cannot always provide favorable outcomes for everyone, which is also another challenge for meeting citizen expectations. Thus, gaining legitimacy in the eyes of citizens through outcome-based methods seems challenging. Police may not have control over outcomes, but they can control the way they exercise their authority when dealing with the public. From this perspective, the procedural justice approach of policing suggests that gaining legitimacy through procedurally-just interactions is more achievable (Sunshine & Tyler, 2003, p.524).

Tyler and Folger (1980) tested the procedural justice concept in the context of police citizen encounters in Evanston, Illinois. They found that perceived fairness of police treatment during citizen-police encounters had an impact upon citizen satisfaction. They suggested that fairness of their treatment affected citizens' satisfaction irrespective of the outcome (e.g. whether being cited for a traffic violation or not). Furthermore, citizens who felt that they were treated fairly during encounters had more positive feelings towards the police, in general. The results indicated that the concept of procedural justice could be applied to settings where government authorities were facing difficulties in providing satisfactory outcomes to all parties desiring to receive claims (Tyler & Folger, 1980, p.282).

In their California Study, Tyler and Huo (2002) interviewed 1,656 residents of Oakland and Los Angeles to test whether procedural fairness generates voluntary deference to authorities (the police and the courts). They found that procedural justice shapes people's willingness to accept decisions. Their findings supported the view that among other factors such as favorability or the fairness of the outcome, procedural justice is the primary factor that people focus on during their encounters with the police or court officials (p.57). They also found that the experienced quality of decision-making and the perceived quality of treatment by an authority had an independent influence on people's perceptions about procedural justice and trust (Tyler & Huo, 2002, p.84).

Sunshine and Tyler (2003) noted that considerable empirical evidence supported the idea that process based public evaluations of police have a significant influence on the assessment of police legitimacy in general as well as in personal encounters (p.519).

Similarly, McCluskey et al. (1999) found that among the factors that influence compliance, the legitimacy of officer intervention is the most important factor in predicting compliance. Thus, citizens are more likely to comply if officers behave respectfully toward them. Tyler (2006) argued that the body of research on police legitimacy has indicated that if the public observes that police meet their expectations regarding trust and confidence; they feel obligated to voluntarily obey the orders of the police and cooperate with them.

Finally, Mazerolle, Antrobus, Bennett, and Tyler (2012) tested the direct and the indirect outcomes of procedural justice policing under randomized field trial conditions in Queensland, Australia. Their research question was whether police could enhance perceptions of legitimacy during a short, police-initiated and procedurally-just traffic encounters, and how this single encounter would shape general views of police. They found that there was a significant difference between control and experimental conditions and citizens who perceived traffic encounters; those who experienced procedurally-just policing had more positive views for specific encounter as well as generalized views of the police.

2.2 Police Legitimacy, Intelligence Gathering and Counter Terrorism

It is generally acknowledged that police cannot prevent crime by solely relying on their own resources and capabilities. In order to be successful in reducing crime, police need public cooperation in the form of intelligence and information sharing. This is also true in the case of terrorism. In order to avert future terrorist attacks, a strong partnership between law enforcement and community should be established, because law

enforcement officials depend on crucial information on terrorist threats that will be shared by community members (Mastrofski, 2007; Harris, 2010). However, a law enforcement agency's intelligence gathering style might affect public perceptions of police and police legitimacy. The US experience after 9/11 could give us idea about on how intelligence gathering efforts may affect the trust between the law enforcement agencies and the public.

In the US, government policies on intelligence have changed dramatically after the 9/11 attacks, and police surveillance authority was widened. The federal government tried to encourage local police departments to play an active role in intelligence gathering process. Billions of dollars were transferred to local police departments by the Department of Homeland Security for technical equipment purchases (such as CCTV systems, crime mapping software). It was believed that these new technologies could assist local police in identifying precursor terrorist activity and preventing terrorist plots (Mastrofski, 2006, p.64).

Local law enforcement agencies were also asked to develop better relations with the communities so that citizens who might know about the terrorist activities would come up to them to share information regarding terrorist threats (Bloss, 2007). However, this "terrorist oriented, community policing" vision has been criticized. It has been argued that direct police engagement in proactive surveillance to identify potential terrorists would lead to ethnic or religion based profiling, and police would become insensitive to the rights of immigrant and Islamic citizens and residents (Mastrofski, 2006; Thacher, 2005).

Tyler (2006) suggested that when citizens perceive the police as trustworthy, they are more likely to comply with police directives and cooperate with police. That is to say, trust is the key factor in shaping cooperation with the police. From this perspective, if public would not trust to police, they would not cooperate and voluntarily share terrorist-oriented information. For instance, Ortiz and colleagues (2007) examined the trust in police in 16 jurisdictions with high concentrations of Muslim Americans and found that distrust in police was the top ranked factor that prevented a collaborative relationship between the community and local law enforcement agencies. Another example is the NYPD's surveillance program¹. It has been argued that the program have done more harm than good and destroyed the trust between American Muslim communities and the police, which also had negatively effected reporting of suspicious activities (Shamas & Arastu, 2012).

Nevertheless, police departments' intelligence gathering styles affect public trust in their organization. While reacting to perceived crime and terrorism threats, police should keep in mind that their actions may produce undesired effects, such as harming the trust between the community and police. Human right violations and profiling incidents would damage police departments' reputation and undermine police legitimacy. If law enforcement officials hope to enlist cooperation of community members, they should recognize that they have to gain public trust first. A community that trusts law enforcement would be willing to share terrorist-oriented information with law enforcement (Ortiz, Hendricks & Sugie, 2007).

¹ The New York City Police Department (NYPD) has established a secret surveillance program after 9/11 attacks and has mapped, monitored and analyzed American Muslim daily life throughout New York City, and its surrounding states. In 2011, the Associated Press (AP) and some other journalists who had obtained leaked internal NYPD documents unveiled the program (Shamas and Arastu, 2012).

2.3 Police Citizen Encounters

Police departments interested in improving their relations with citizens need to improve their way of interacting with the citizens. Police departments sometimes generate communication problems with citizens through their adherence to an overly authoritarian and distant law enforcement role. Some officers might think that treating citizens respectfully might challenge their authority. However, as stated by the theory, procedurally-just policing could help police departments to gain voluntary deference and have an impact on citizen satisfaction at the same time. In order to carry out an accurate analysis of procedural justice and police-citizen encounters, one needs to comprehend the nature of these interactions.

Police citizen encounters constitute the most basic aspect of policing, and the nature of these contacts has a subsequent influence on the perceptions of police legitimacy. Individuals carefully observe police behaviors during these encounters and learn more about the prevailing policing practices and the fairness of the police. The existing literature suggests that every interaction including even the most minor personal interactions with the police can have a strong influence on people's perceptions about the police (Cheurprakobkit, 2000; Tyler, 2006; Tyler & Huo 2002;).

Citizens may contact the police for a variety of reasons and these contacts can be voluntary or non-voluntary (Cheurprakobkit & Bartsch, 2001). Involuntary contacts, also referred to as "police-initiated contacts", are contacts where police initiate interactions for a variety of reasons such as stopping a person to make an arrest or to issue a ticket for a traffic violation. In non-voluntary contacts or "citizen-initiated contacts", it is the citizen

who initiates the contact to seek services from the police such as asking for help after being victimized, or reporting a traffic accident or a crime.

Decker (1981) suggests that the nature of “citizen-initiated” interactions are more positive in “style and substance” due to the nature of the contact (as cited in Skogan, 2005, p.299). Likewise, Cheurprakobkit (2000) found that citizens who initiated police contact held more positive attitudes towards the police performance and more favorable views regarding the encounter. On the other hand, his findings supported the idea that favorable views of police encounter are lower and police fairness is in question more often when police initiate the contact. The question that then arises is why people hold more favorable views of the police encounter when they initiate the contact.

Several explanations could be listed. First, legitimacy of the intervention is already ensured in citizen-initiated interactions (Skogan, 2005, p.230). Unlike police-initiated encounters, it is the citizen who requests police intervention, which gives police the “right” to intervene upon the situation. Therefore, this makes people believe that police commands, decisions, directives are to be obeyed in such situations. Second, legitimacy of the intervention also affects the perceived fairness of the outcome. Fairness of the outcome is less likely to be questioned in citizen-initiated encounters, because the police are there to help and solve their problem. Thus, people are more likely to feel that even unsatisfactory outcomes should be accepted (Cheurprakobkit & Bartsch, 2001).

As previously noted, the specific features of police-citizen encounters have an influence on citizen perceptions. Tyler and Folger (1980) cited Parks’ (1976) study on police responses to victimization and noted that the citizens’ account of how police

handled the investigation was also one of the determinants of satisfaction. From this study, they reach the following conclusion

An important aspect of fair treatment in citizen-police encounters is the extent to which the police take actions that conform with the role of citizens as clients who have a legitimate right to call upon the police for services and to be taken seriously in that request (p.292).

In another study, Skogan (2005) examined the character and consequences of police-citizen encounters in the city of Chicago. He found that the actions and demeanor of police on the spot accounted for most of the differences in satisfaction. His research also pointed out the significance of fairness and politeness on citizen satisfaction in police initiated encounters. He listed major determinants of citizen satisfaction with police encounters as “being polite, helpful, fair, attentive to what they had to say, and willing to explain what was going on” (Skogan, 2005, p. 316).

Community context is also another factor that affects the nature of the police citizen encounter. The use of aggressive crime control strategies, disrespectful policing, distrust, less service to victims and being harsher on suspected criminals than necessary characterize the nature of policing in socially disadvantaged and crime-ridden neighborhoods. Residents of such communities are more likely to be subject to aggressive crime control strategies that aimed to control higher levels of crime in these neighborhoods. Police stops are more common due to the enhanced enforcement. Police patrol the streets more frequently, conducting pedestrian and vehicle stops to detect criminal activity (Gau & Brunson, 2010; Warren, 2011; Brunson & Weitzer, 2009).

The Committee to Review Research on Police Policy and Practices published a report on fairness and effectiveness in policing in 2004. In line with the above-mentioned

argument, the report suggests that the likelihood of arrest, use of coercive authority and filing of official reports are higher in crime-ridden neighborhoods than others. The report argues that these are associated with the neighborhood context and higher levels of anticipated danger (Skogan & Frydl, 2004, p. 190). According to the report, police in concentrated disadvantaged neighborhoods tend to behave disrespectfully towards such neighborhood residents when compared with officers serving more affluent neighborhoods (Skogan & Frydl, 2004).

The quality of policing can also be influenced by municipal budget problems. Police officers in departments with budget issues usually receive lower salaries, lower levels of in-service training, supervised poorly and deal with higher levels of crime. Therefore, an organization's human resources and financial capabilities should also be added into this equation, while evaluating the police-citizen interactions in these urban environments (Davis et al., 2005).

As a result of disrespectful policing and aggressive enforcement, the level of trust of the police as well as perceptions of police fairness in these communities are often lower than the general perceptions of the public as a whole (Weitzer, 1999). The literature on police-citizen relations suggests that residents in socially disadvantaged and crime-ridden neighborhoods are often skeptical about policing practices (Gau & Brunson, 2010; Brunson & Miller 2006; Weitzer & Tuch, 2002; Tyler, 2005). In interpreting the high frequency of their contacts with police, inner city residents may believe that they are being stopped and questioned by the police just because of their group's social position. Specifically, African Americans have reported they feel over-policed, and personal and

vicarious experiences fuel these perceptions (Brunson, 2007; Warren 2011). Thus, increasing patrol activities and police presence in inner-city neighborhoods can foster the perceptions of racial discrimination by the police (Weitzer & Tuch, 2002).

Stop and frisk practices also play a significant role in such perceptions. These have been widely used in New York City and have also been implemented in different cities across the country. Some scholars have noted that the number of citizen complaints regarding police misconduct and abuse of force increased dramatically after the heavy use of stop and frisk activities to deal with the increase of street crimes (Greene, 1999; Braga, Hureau & Winship, 2008).

Empirical studies provide support for the argument that in some cities police abuse their authority where “stop and frisk” or “stop and search” is widely used as a crime control strategy (Gau & Brunson, 2010; Brunson, 2007). In his qualitative study titled “Police Don’t Like Black People: African-American Young Men’s Accumulated Police Experiences,” Brunson (2007) found that stop and search practices are widely used towards young inner city residents. They reported that police in their neighborhood routinely stop and search people, even without a reasonable suspicion. When police find nothing illegal after the search, then they try to provoke juveniles to obtain a reason for arresting them. The findings of Brunson and Miller’s (2006) study also supported Brunson’s argument. Young men in their study complained about the treatment they received from the police. They reported that the police tend to use abusive and insulting language when addressing to them. They also reported that disrespectful policing provoked them and they tended to exchange insults with the officers in such situations (p.

627). These findings suggest that disrespectful policing in crime-ridden neighborhoods causes hostility toward the police and results in a low level of trust in the police. Thus, it can be concluded that the abuse of stop and frisk does not only violate individual liberties, but also undermines trust of the police by harming police-citizen relations (Davis et al., 2005).

Despite the negative feelings towards police, residents in concentrated disadvantaged neighborhoods are aware that they need the police and request from police to provide more protection (Skogan & Frydl, 2004; Carr, Napolitano & Keating, 2007). However, they expect a balanced approach and ask for respectful treatment from the police while providing for their security needs. Stoutland (2001) noted that the residents of Boston's high crime neighborhoods viewed being treated with respect as a critical element in feeling secure. According to her, respect is a significant factor in determining the credibility of the department. As one resident in her study stated "you are the law. But if you want respect, you got to show respect" (Stoutland, 2001, p. 250).

As mentioned, many poor and minority communities felt they are over-policed and have become the objects of special police attention. In order to eliminate negative citizen perceptions and attitudes towards them during encounters, scholars have suggested several strategies based on the procedural justice literature.

The procedural justice approach advocates that police can pursue their crime control mission without alienating communities. From this perspective, in order to alleviate their problems with the community members, police should follow procedure-based policing principles during their interactions with the public. Available literature on

procedural justice provides empirical evidence to support this argument (Davis et al., 2005; Gau & Brunson, 2010; Sunshine & Tyler, 2003; Tyler, 2005).

The National Research Council's report (2004) on police effectiveness and fairness lists several actions based on procedural justice approach. First, the report suggests that listening to people and letting them to exercise their "voice" increases citizen satisfaction with the police. When people are given the opportunity to explain their situation and communicate their views to the police, they become satisfied with the police services. Second, the public expects the police to be objective and unbiased. In order to be seen as fair in the eyes of the public, police should be neutral when resolving the disputes. Third, being treated with dignity and respect are also significant elements of citizen satisfaction and valued by the public. Finally, if people feel that police cares about their "well-being" and consider their concerns, they would trust the police. This would also affect their perceptions of fairness and they would more likely to believe that the procedures that they follow are fair. In order to give the message that police "care" about citizens, police should explain their decisions and reasons for their conduct (Skogan & Frydl, 2004, p.304).

2.4 Public Trust in the Turkish National Police

The history of policing in Turkey dates back to 1845. The establishment of a Turkish law enforcement force to preserve public order dated back to the ancient Turks, but on April 10, 1845, for the first time in Turkish history, a new organization was founded under the name of Police. In 1923, after the Turkish war of independence, the Turkish Police were reorganized under the Ministry of Internal Affairs, and assigned to

maintain public order with two other law enforcement forces: the Gendarmerie, and Coast Guard (Durmaz, 2007).

The Turkish National Police (TNP) is a national and an armed civil force, which has jurisdiction over nearly 53 million people in Turkey, which makes up 75 % of the population (TNP Annual Report, 2008). The organization performs duties in cities, towns, townships, greater rural communities, border gates, highways and airports.

In parallel to the increase in general population and city population, the size of the TNP has enlarged, especially, in the last 30 years. The TNP has evolved into a strong and modern police organization over the time. The numbers reflect the growth of the organization; while the number of personnel was 37,541 in December 1973, today the number is 209,694 (Durmaz, 2007; TNP Annual Report, 2008).

The General Directorate of Security, which is the central organization, functions under the Ministry of Interior and serves as the headquarters for the whole organization. The Minister of Interior appoints the General Director of Security, who is the head of the police organization. The General Directorate of Security is comprised of 37 departments such as Intelligence, Counter Terrorism, IT Technologies, Dignitary Protection, Smuggling and Organized Crime, Special Operations, Foreigners and Immigration, Passport and Traffic Enforcement. Nevertheless, based on this organizational structure, we can define the TNP as highly centralized (Bucak, 2009).

The provincial organization consists of 81 city police departments, 884 Security Directorates of Towns affiliated to provinces, 3 Border Gates Security Directorates, 4

Free-Zone Police Stations, and 834 Police Stations throughout Turkey (TNP Annual Report, 2008). Each city department has subdivisions in counties and small towns. City police departments have strong connections with the headquarters and receive all kinds of support from (including personnel or financial support). On the other hand, city police departments operate under the command of governors, who have administrative authority in provinces and districts. City police departments are also responsible to prosecutors regarding crime investigation (Bucak, 2009).

Since its establishment, Turkish policing has evolved and the Turkish National Police (TNP) has professionalized. Parallel to improvements in the quality of policing in Turkey, public trust in the police has also increased. According to the Turkish Economic and Social Studies Foundation (TESEV) survey, trust in the Turkish Police was 5.0 in 2000 and 6.1 in 2004 on a 10-point scale (Adaman, Carkoglu & Senatarlar, 2005). A more recent survey conducted in 2008 by the same research team with the support of Economic Policy Research Foundation of Turkey (TEPAV) found that public's confidence in the police has continued to increase and the TNP is among one of the most trusted public institutions in Turkey (Adaman, Carkoglu & Senatarlar, 2009). Respondents in TEPAV's study rated the TNP as the third most trusted institution (6.4/10), right after the military (8.3/10) and Pre-High School Education (6.5/10). This finding is also supported by other studies. According to the European Value Survey (which is also a part of the World Value Survey), 71 percent of Turkish Respondents expressed the view that they had a great or quite a lot confidence in the TNP.

However, Cao and Burton (2006) argued that interpreting the confidence in the Turkish police based on the global level of public confidence might be deceptive. It has been argued that despite the fact that the TNP is among the most trusted government institutions, this might be highly correlated with their success in dealing with violent crimes, combating terrorism and organized crimes (Cao & Burton, 2006; Karakus, McGarrell & Basibuyuk, 2011). That is to say, higher levels of global trust of the department, does not mean that the Turkish public conclusively trust all police units at the same level. For instance, homicide units might receive more support from the public because of their success in solving unidentified cases or intelligence units might receive more attention because of their achievement in preventing terrorist threats. On the other hand, some units such as patrol or traffic are less respected and may receive less support from the public simply because of their “unpopular” tasks or duties (Dix & Layzell, 1983). Most of the time, these units spend their time dealing with minor offenses and they have higher levels of face-to-face contacts with ordinary citizens (Radelet & Carter, 1999).

Furthermore, the TNP performs many administrative tasks in addition to their law enforcement duties such as enforcing immigration laws, issuing passports and resident permits, securing airports, keeping national crime records, issuing gun carry permits or motor vehicle registration. Thus, citizens might also consider the quality of service that they received during these administrative processes when evaluating the confidence in the TNP. Needless to say, these interactions are quite different from daily basis interactions with the officers on the street. Thus, in the Turkish context, higher levels of public trust in the police do not necessarily mean that the Turkish public finds all police

units honest or trustworthy.

2.5 Public Trust in the Turkish National Police Traffic Units

Traffic enforcement is regarded as the most visible component of the TNP due to their high visibility on the streets. In other words, traffic officers are seen by and interact with law-abiding citizens more than any other police units (Ozbaran, 2010; Kazu, 2003; Aytac, 2005). However, despite their high visibility on the streets and their intensive efforts to prevent road traffic accidents, surveys indicate that the Turkish people have less trust in and hold stronger negative attitudes toward the TNP's traffic officers than non-traffic officers (Adaman et al., 2003; Aytac, 2005; Yasak, 2011). The negative public perceptions of the traffic police in Turkey stem mainly from perceptions of unfair enforcement practices, corruption and the "improper attitude and demeanor" of traffic officers toward the public. When Turkish citizens were asked about their perceptions of traffic units, significant numbers of people stated that traffic police are poor in appearance, often use an insulting tone of voice, display anger and tend to punish citizens who carry out traffic violations, quite harshly (Derdiman, 2006; Yasak, 1999; Yalcinkaya 2012).

In 2003, the Turkish Economic and Social Studies Foundation (TESEV) survey asked businessman and citizens about their satisfaction with both the traffic and non-traffic police. The survey results indicated that 57 percent of the respondents were not satisfied with the services they received from the traffic police, whereas only 46 percent of the respondents stated that they were not satisfied with the non-traffic police. When the same survey asked about their perceptions on bribery and corruption among

government institutions, businessman and citizens rated traffic police 7.6 on a scale of 0 to 10 (0 being the most transparent and 10 being the most corrupt) indicating they were one of the most corrupt institutions and were rated only slightly better than the customs police. In the same study non-traffic police received a rating of 5.7 for corruption (Adaman, Carkoglu, & Senatalar, 2003). Needless to say, such perceptions could undermine the legitimacy of the Turkish police force in general, and the TNP's traffic units, specifically.

One other explanation for the negative citizen perceptions of the traffic police and the lower levels of satisfaction with this section of the TNP might be related to the officers' demeanor during police-citizen encounters. There is a widely held perception that traffic police tend to use an insulting tone of voice when interacting with citizens. Recently, a parliamentary member who had an encounter with a traffic officer held a press conference in the Turkish Parliament and stated that he found the police despotic and rude when asking for his driver's license and registration papers ("Ehliyet Sormasi Degil," 2013). Having said that, the perceived rudeness of the police is not only an issue for traffic units, some citizens also believe that patrol units are rude as well. According to Aytac (2005), the majority of the Turkish citizens interviewed by his students were found to hold the perception that the Turkish police are rude and impolite.

Another criticism against the traffic police is that they are inclined to vigorously enforce a fine for every violation. In particular, some people criticize the operationalization of speed control operations and argue that the police are setting a "trap" for drivers when conducting these operations. Recai Irmak, a local newspaper

columnist from “Angara Gazetesi”, criticizes the present method of speed enforcement as follows:

...traffic police is harsh and trying all the ways to write tickets. All the citizens that I interviewed agreed on this and I have witnessed to this attitude as well. Police themselves are violating traffic rules, they are exceeding speed limits without any reason, but they are setting up traps by hiding their “radar” car in the middle of the road to give people tickets. On a red-light crackdown, I overheard one supervisor saying “give them tickets, give all of them, let’s see what is going to happen when they go to the court.”

When these allegations were conveyed to the traffic police officers in Turkey, some officers confirmed the observation of disrespectful policing practices, but they also complained about citizen attitudes towards the police during these encounters. In her study on traffic police perceptions of drivers and pedestrians, Yasak (2011) interviewed several Turkish traffic police officers. The officers in her study admitted that some of their colleagues raised their voices when interacting with drivers. They agreed that officers should be more respectful to citizens when interacting with them. However, they complained that long working hours and other work-related problems played a major role in fostering disrespectful police behavior (Kirel & Cengiz, 2006; Yasak, 2011).

The officers in Yasak’s (2011) study also mentioned that some people simply do not like the traffic enforcement police because they do not like rules, or they do not understand the logic behind an officer’s orders, which is considered as another source of the disputes commonly observed during these encounters. One officer in the study stated,

Our duty is enforce the law, but when a driver could not understand that we are just doing our job, then it causes problems. For instance, once I ordered a driver to move his car because of illegal parking, he responded ‘then you show me where to park.’ Such responses ignite the argument between the police and the citizen (Yasak, 1999, p. 108).

The officers in the same study also criticized the traffic laws by arguing that the laws are not strict enough to deter people from violating them. According to the officers, citizens expect them to enforce the laws fairly, but the reality is that some people who have “status” often use their powers to avoid receiving a traffic ticket (Yasak, 1999). The findings of another study, which aimed to measure the sources of traffic police stress, confirmed that officers usually get stressed because of many related bureaucratic pressures that exist and that stem from favoritism. Traffic police officers in Kirel and Cengiz’s (2006) study asked 414 traffic police officers about the sources of their job stress. The survey results showed that writing a traffic ticket often became an issue for an officer when the driver who received the ticket was a privileged person. The officers stated that some of their colleagues were appointed to a different city or department because they wrote a ticket for a privileged driver (Kirel & Cengiz, 2006, p. 109).

Finally, perceived corruption is another major issue, which also erodes the legitimacy of traffic units. Despite the improvements that have occurred in the last decade, there is still the perception that the traffic police are corrupt and they may overlook some violations in exchange for a bribe. A public poll from 2002 asked business people whether they have offered bribes to the police, and 53% of the respondents stated that they gave bribes to traffic police officers. However, only 33% of the respondents reported that they gave bribes to non-traffic police officer (Caglar, 2003). One of the recent studies that reflects TNP members’ and Turkish citizens’ attitudes towards petty corruption is the Turkish Ethics Council’s survey which was conducted by a team of faculty members from the Turkish National Police Academy. The study results found that there is a general tolerance towards minor corruption among the lower and high-ranking

officers, especially in traffic units. The findings of the survey reflect the view that their managers were not inspecting the police officers adequately, either on bribery charges, or on the gifts they had received (Cerrah, Cevik, Goksu, & Balcioglu, 2009, p. 59).

Although some citizens still hold the belief that corruption is widespread among traffic officers, public surveys indicate that currently fewer citizens believed traffic police were corrupt when compared with previous years. Adaman and colleagues conducted three different surveys in 2000, 2004 and 2008. The citizen perceptions of traffic police corruption were 7.0 in 2000, 7.6 in 2004 and 6.5 in 2008 on a 10-point scale (Adaman, Carkoglu & Senatarlar, 2009). The surveys showed that the Turkish public found the traffic police more transparent in 2008 when compared to 2000. On the other hand, the above-mentioned surveys indicate that although the quality of traffic enforcement has improved and petty corruption has decreased in recent years, the Turkish people still view the traffic police as somewhat corrupt.

Within this context, the traffic police in Turkey continue to struggle to gain compliance, while ordering the traffic or sanctioning the law violators. Many disputes arise during traffic stops. Before starting the randomized control trial in Adana, officers stated that they called patrol officers almost every day because of disputes arising during stops. Furthermore, because of the objections to traffic courts, these police spend a lot of time in courts trying to explain a driver's violations to the judge. Police chiefs are also receiving many complaints regarding impolite and disrespectful police behavior. As mentioned, all these factors indicate that some problems exist in the context of traffic enforcement in Turkey, and citizens' negative perceptions of the traffic police could

undermine the legitimacy of the traffic units.

2.6 Nature of Traffic Enforcement

In today's world, traffic enforcement is one of the major duties of police departments. Traffic stops play a major role in traffic enforcement activities. A routine traffic stop includes traffic related stops because of a traffic law violation, as well as stopping a driver who is suspected of being involved in a crime. The latter can be defined as "felony-related" stops (Lichtenberg & Smith, 2001). In this study, the term "traffic stop" is used for defining traffic related stops in which law enforcement officers issue a traffic citation, and "felony-related" stops was excluded from the analysis.

Although the public often defines the primary police role as crime control and order maintenance, a great deal of the citizens' contact with the police is via traffic stops in the United States (Durose, Smith, & Langan, 2007). According to a national survey, more than half of all police contacts with citizens (56%) occurred during vehicle stops in 2005 (Durose, Smith, & Langan, 2007). Thus, traffic stops constitute an important practice of policing in the United States and in developed western countries.

The nature of traffic enforcement is different from traditional law enforcement duties. First, there is a significant amount of discretion involved in traffic enforcement (Schafer & Mastrofski, 2005). While enforcing traffic rules, officers often exercise a great amount of discretion and may behave leniently to offenders they have stopped for traffic offenses, unlike property or violent crime offenders. Furthermore, unlike other offenses, police officers may under-enforce the law when they witness a traffic violation

(Moskos, 2008; Schafer & Mastrofski, 2005).

Second, officers enforcing traffic laws may have more contact with citizens of higher social and economic status than ordinary patrol officers. Unlike property or violent crime offenders, most traffic offenders comprise law-abiding citizens and many of them that are stopped are not used to being treated as offenders and view the police as public servants. Thus, when encountering law-abiding citizens, the police may need to use different interaction strategies. In other words, while enforcing traffic laws, police officers should be on their best behavior and be highly respectful to traffic offenders. Otherwise, drivers with higher social status could easily file a complaint against them, because such people have the financial resources and opportunities to challenge an officer's decisions in a court (Schafer & Mastrofski, 2005, p. 225).

Finally, the nature of the interaction with police during a traffic stop may have a significant impact on a driver's perception of police. According to Tyler and Huo (2002), "even minor personal experiences with legal authorities—dealing with a fender-bender traffic accident, a burglary or a street stop—have a strong general influence on people's views about the police and the courts" (p. 206). Traffic stops do not only shape driver perceptions of the police, but also have significant effects on passengers' perceptions of the police service. In addition to the passengers in a vehicle, a single contact can have far-reaching effects on the perceptions of the police more generally. Individuals who encounter police during stops may also share their personal experiences with family and friends, which is also common in Turkey. Despite the similarities in citizens' reactions to traffic stops, there are significant differences between Turkey and the United States when

it comes to the enforcement practices. In order to better understand the study, one needs to know the nature of traffic stops in Turkey.

2.7 Nature of Traffic Enforcement in Turkey

Traffic enforcement is considered an important part of policing in Turkey, where more people are killed each year in traffic accidents than by terrorist attacks. More than 30,000 people died in Turkey in the last 30 years because of terrorism; whereas the number of traffic fatalities in Turkey between the years 2001 to 2011 is due to traffic accidents was 47,512 (Ozdemir, 2012). The number of traffic deaths in 2011 alone was around 4,000 people. Because of the significance of the issue, there are four divisions for traffic enforcement in the TNP headquarters, and specialized officers are assigned to enforce traffic laws and regulations (Ozbaran, 2010).

In Turkey, police-citizen encounter in a traffic stop usually begins with the temporarily detention of a driver by police due to a traffic offense. Usually, teams of traffic officers set up checkpoints marked by traffic cones and signs. At the checkpoint, the traffic is guided by the use of cones through one lane. An officer signals with his hands when he intends to stop a vehicle. When the stopped driver is parked at the side of the road, the officer then asks for a license and registration from the driver. After receiving the documents, the officer explains the offense and return to his car to issue a traffic ticket. If there is no outstanding warrant for the driver or the officer does not observe any suspicious activity and the driver's documents are accurate, then the officer returns the driver's document with a traffic ticket to them and the driver is free to leave.

In a regular speeding enforcement operation in Turkey, two teams of traffic officers are organized to conduct speed limit controls. One unmarked vehicle with two officers stops at the roadside to monitor traffic speeds and the other officers set up a checkpoint at a further location on the roadway to stop vehicles and issue citations. When the officer in a radar-equipped vehicle detects a speeding violation, the identifying information regarding a violator's car type and the cited speed is transmitted to the officers at the checkpoint. Then, when the violator reaches the checkpoint, a traffic police officer orders the driver to pull over to the side of the road. The driver is informed about the violation and the car's speed, and is asked to provide his or her driver's license and registration for a speeding ticket.

Turkish speed limits are defined according to the rules laid down in the Turkish Road Traffic Law document. Unless otherwise posted, the maximum legal speed limit for cars in Turkey is: 50 kilometers-per-hour (31 mph) in cities and towns; 90 kilometers-per-hour (55 mph) in two-lane intercity roads; 110 kilometers-per-hour (68 mph) in divided intercity roads; and 120 kilometers-per-hour (75 mph) in interstate highways. According to the law, there are two types of speeding violations: (1) A driver who exceeds the speed limit up to 30% of the designated limit is fined 166 TL (\$83). (2) Fines double when a driver is 30% over the designated speed limit and the total fine in this case is 343 TL (\$171) for this type of violation.

It should be noted that the nature of traffic stops in Turkey is significantly different from the traffic stops in the United States. First of all, specialized traffic officers carry out the stops. These officers receive same education as the other law enforcement

officers. However, in order to be specialized as a traffic officer, they have to attend an in-service training program for traffic enforcement. Usually these units do not investigate “street crimes” or other types of law violations. Secondly, most of the traffic stops are traffic related, and “felony-related” traffic stops are very rare. Traffic officers in Turkey do not conduct pretextual stops to arrest criminals. In pretextual traffic stops, “an officer stops a vehicle for a traffic violation under the pretext that the stop may elicit another, more serious violation” (Roberg, Novak, & Cordner, 2009, p.352). Thirdly, fines for traffic violations are lower and there is a leniency in traffic enforcement in Turkey. No arrests are made for traffic violations in Turkey unlike the United States. A person is to be arrested only if he or she offers a bribe to the officer, or if there is a physical attack on the traffic police. In some cases, drivers do not give their license and registration, and officers try to persuade them to receive documents before they call for back up help. While arrests and resistance to police is high in drunk driving situations, such behaviors are very rare for some other controls such as speeding enforcement. Last but not least, people can talk to each other at the checkpoint while waiting for the officers to issue their tickets.

When a driver is stopped in Turkey, the driver can get out of the car, go next to the patrol car with the officer, and stand next to the officer while the officer is writing a ticket, and ask questions at that moment. This does not mean that the officer has to answer the driver’s questions, but these actions can be done without a penalty. Furthermore, sometimes people joke with each other or criticize the traffic enforcement strategies in front of the police. Needless to say, a driver cannot do all these actions during a traffic stop in the United States.

Despite the police leniency towards traffic offenses, tensions between citizens and police officers may rise quickly in the course of any traffic enforcement situation. Even when drivers know a citation is justified, they may get frustrated and may demonstrate aggressive behavior after receiving a citation because of the related burdensome factors such as the financial impact of the citation, the embarrassment or feeling of guilt (Radelet & Carter, 1999). Furthermore, similar to other developing countries, drivers in Turkey believe that a traffic ticket or minor summonses can be avoided by displaying aggressive behavior, disclosing occupational position or bribing the officer (Neild, 2007).

CHAPTER 3: RANDOMIZED EXPERIMENTAL DESIGNS AND POLICING RANDOMIZED CONTROLLED TRIALS

Randomized experiments are regarded as a particularly strong method for relating effects to their causes. In other words, properly-designed and well-executed randomized experiments can provide more valid answers to evaluators about causation than non-experimental observations (Weisburd, Petrosino, & Mason, 1993). Experimental studies are widely acknowledged as the most appropriate method for hypothesis testing and program evaluation. In an experimental research study, “an intervention is deliberately introduced to observe its effects” (Shadish, Cook, & Campbell, 2002, p.12). There are different types of experiments.

3.1 Randomized Controlled Trials

Randomization is the most important element of any randomized experimental design. Random assignment is a process where subjects are randomly assigned to a control or experimental condition. It is assumed that a rigorously implemented randomization process would generate two or more probabilistically similar groups before the experimental intervention (Shadish, Cook, & Campbell, 2002, p.13). Thus, any observed subsequent differences between the groups would be due to the intervention, not to unknown and unmeasured confounders. Because of the advantages of randomization, such designs have strong internal validity and most of the problems regarding causation are eliminated due to their nature (Shadish, Cook, & Campbell, 2002; Maxfield & Babbie, 2009).

In order to obtain convincing results from a randomized experiment, the key

features of the randomized experiment should not be compromised (Welsh & Farrington, 2005). Implementation problems such as assigning individuals into the preferred groups, differential attrition or cross over between groups undermine the internal validity of a study. As discussed above, randomization is one of the important features of such experiments. Thus, the randomization method that is used (e.g., coin toss or a table of random numbers or lottery) in a study should be described clearly, and a rigorous random assignment process should be maintained during implementation (Shadish et al., 2002). In other words, some preventive measures should be taken to implement the experiment with “full integrity” (Welsh and Farrington, 2005, p.340). However, in reality, researchers often encounter problems with the proper administration of the random assignment process and few studies completely implement treatment conditions (Shadish et al., 2002, p.488).

Another key feature of randomized experiments is that a sufficiently large number of units (e.g. people, area, class, school) should be randomly assigned to the treatment and comparison groups in order to achieve adequate statistical power (Welsh and Farrington, 2005). Welsh and Farrington (2005) suggests that assigning at least 50 units in each category would help us to ensure that the treatment group is equivalent to the comparison (p.341). This number may easily be achieved when the unit is the individual. However, researchers are often confronted with the difficulty of achieving a sufficient number of units, specifically in group-based trials (Shadish et al., 2002, p.278). For instance, the unit of analysis for a school-based violence intervention is the entire school. The number of total schools assigned to experimental or control conditions has more influence on statistical power than the total sample size of students, so achieving the

below mentioned numbers for a school-based research study is potentially very difficult and quite expensive (Raudenbush, Martinez, & Spybrook, 2007).

There is a widely held perception that experiments are being conducted in laboratory settings under carefully controlled conditions. This is in fact true for natural sciences. However, laboratory experiments are not common in the social sciences, because it is difficult to carry out experiments in social settings (Maxfield & Babbie, 2009). For instance, almost all criminal justice experiments take place in field settings, rather than laboratories. Because of the practical and ethical difficulties, the number of randomized experiments in criminal justice is very small when compared to other disciplines such as medicine (Farrington, 1983; Braga et al., 2013; Oakley, 2000; Feder, Joplin, & Feyerherm, 2000).

Although the terms randomized trial and randomized controlled trial are often used interchangeably, these two designs have a major difference, which is the control group. A randomized trial can be called as randomized controlled trial if it has a control group that receives no intervention. In a randomized trial without a control group, two or more groups are assigned to different interventions and control group does not exist. When using randomized controlled trial designs, the researcher supposes that the only systematic difference between the control and treatment group is due to the intervention. Since the most accurate results for comparison can be obtained from a randomized controlled experiment, it is often considered the “gold standard” for study designs (Shadish, Cook, & Campbell, 2002).

3.2 Randomized Experiments in Criminology and Policing Experiments

Criminal justice researchers are aware that the best way to eliminate bias and ambiguity when measuring an intervention or criminal justice program's effect is through experimental designs (Weisburd, Petrosino, & Mason, 1993). However, difficulties in obtaining agency approval, the unavailability of skilled researchers, limited resources, the labor intensive requirements and the time-consuming nature of such studies discourage criminal justice researchers from conducting randomized experiments (Feder et al., 2000; Oakley, 2000; Braga et al., 2013). Due to these mentioned difficulties, many researchers tend to conduct quasi-experiments and observational studies rather than randomized experiments. Similar to randomized experiment, the purpose of quasi-experiments is also to test the effect of intervention on some dependent variable, but the distinctive feature of quasi-experiments is the absence of random assignment (Maxfield & Babbie, 2009).

Despite the difficulties of their application, the number of experiments in the field of criminal justice has recently increased (Weisburd, Petrosino, & Mason, 1993; Braga et al., 2013). The increase in the use of experiments in criminology is associated with the expanding popularity of the evidence-based approach, which aims to provide scientific evidence to policy makers on "what works best" (Braga et al., 2013; Oakley, 2002; Welsh & Farrington, 2005). The evidence-based approach first gained attention in medicine, and recently, has also garnered support in the social sciences. Specifically, randomized controlled trials have received attention in criminal justice and become a significant element of evidence-based policy in this field (Petrosino, Kiff, & Lavenberg, 2006). Welsh and Farrington (2005) argued that crime prevention policy should also be guided by the best possible evidence on "what works." They argued that in order to help

policy-makers to make rational decisions, systematic reviews of interventions that demonstrate the effectiveness of each crime prevention measure should be available.

As mentioned, the number of randomized experiments in criminal justice has increased gradually and many have been carried out in different criminal justice settings (Farrington, 1983; Weisburd, 2005; Braga et al., 2013). Farrington and Welsh (2005) identified 83 randomized experiments with offending outcomes, which were published from 1982 to 2004 in English. The breakdown of these 83 into categories is as follow: 12 on policing, 13 on prevention, 14 on corrections, 22 on courts, 22 on community interventions. Petrosino, Boruch, Farrington, Sherman and Weisburd (2003) reported the total number of distinct criminological experiments published in English between the years 1945 and 1993 as 267. Most of these experiments were conducted in the United States. Farrington and Welsh (2005) noted that only 10 out of 83 experiments with offending outcomes were conducted outside the United States. Similarly, Petrosino, Kiff and Lavenberg (2006) found that the number of randomized field experiments published in the *British Journal of Criminology* published between 1960 to 2004 was only 9, and only one of them was published within the last 20 years (Petrosino et.al, 2006).

Farrington and Welsh (2005) identified 12 randomized experiments in policing that were published in English between the years 1982 to 2004. Notably, all of these 12 experiments that focused on policing were conducted in the United States. The number of randomized experiments that focused on policing between the years 1957 to 1981 was only 4 (Braga et al., 2013; Farrington & Welsh, 2006). Specifically, the number of randomized experiments in policing increased remarkably during 1980s (7 experiments) compared to 1970s (2 experiments).

At the beginning of the 1970s, researchers started to look for empirical evidence for the broadly accepted assumptions of policing. Routinely patrolling neighborhoods in police cars was the central policing strategy for preventing crimes at that time. It was assumed that one of the best responses to increasing criminal activity was to increase patrol forces and displays of police presence on streets. In order to test this broadly accepted assumption, Kelling and his colleagues (1974) designed an experimental study in Kansas City with the support of police foundation.

The so-called Kansas City Preventive Patrol Experiment, which was not a randomized controlled trial, aimed to determine whether varying the level of routine preventive patrol via marked motor patrol units could deter crime (Weisburd & Braga, 2006). In this study, 15 Kansas City police beats were divided into three groups, which involved reactive, control and proactive beats. In the “reactive” beats, routine preventive patrol units only responded to calls for service and restrained from carrying out routine preventive patrol. In the “control” beats, routine preventive patrol was carried out as usual. The level of preventive patrol was intensified in the “proactive” beats, and additional patrol cars were assigned to those beats. The study found that varying the level of preventive patrol in police beats does not affect the level of crime, service delivery and citizen feeling of security (Kelling, Pate, Dieckman, & Brown, 1974).

The Kansas City Preventive Patrol Experiment was criticized because of its design. First, a methodological problem with this study was that there were only 15 units examined in the pre and post testing stages, which is considered as being too small to ensure similarity on extraneous variables. There was also criticism of the study’s random assignment method. The configuration of the beats was determined by the police based

on their operational concerns, so it seems that the beats were not properly randomized. Therefore, it can be considered as a quasi-experimental program evaluation rather than a randomized experiment (Farrington, 1983, p.275). Furthermore, it was argued that allocating patrol beats, as the unit of analysis was inappropriate, because the impact of preventive patrol would be weakened when police patrol was evenly spread throughout a large beats (Weisburd, 2005; Sherman & Weisburd, 1995). Despite criticisms of its design, the Kansas City Preventive Patrol Experiment is one of the most influential studies in policing.

Another groundbreaking randomized experiment in policing conducted by Lawrence Sherman and Richard Berk was the Minneapolis Domestic Violence Experiment. This study was the first controlled randomized experiment conducted in the United States that tested the effects of arrest for any crime (Sherman & Berk, 1984). The randomization was achieved through a lottery selection design. In other words, the police responses to domestic violence incidents were determined by the lottery, which included three different handling methods. The officers in the experiment were given a pad of report forms, which were color coded for the three different handling strategies. These strategies were: (1) arrest of the offender, (2) mediating the dispute, (3) sending away the offender from the scene for eight hours. Thus, when the officer on duty encountered a domestic violence case, he was required to take the action that was indicated by the report form on the top of the pad.

The findings of the experiment suggested that arresting the spouse in domestic violence cases results in fewer repeat incidents than advice, mediation or ordering the offender to leave the premises (Sherman & Berk, 1984). The results had subsequent

effects on police responses to such cases and officers tended to use arrest as the main strategy when dealing with domestic violence cases (Welsh & Farrington, 2005). Furthermore, the experiment promoted the acceptance of randomized experiments in policing and encouraged researchers to conduct such experiments at other sites (Sherman & Cohn, 1989; Weisburd & Braga, 2006).

As previously stated, one of the earliest challenges to the traditional policing strategies came from the Kansas City Preventive Patrol Study. The project tested one of the traditional strategies in place, the preventive routine patrol, and found that it had little value in crime prevention. Another study by Sherman and Weisburd (1995) reanalyzed the effectiveness of routine preventive patrol by focusing on specific crime locations, rather than large geographic areas. The Minneapolis Hot Spots Experiment found that allocating resources based on problematic locations or places instead of whole jurisdiction, “works” better in reducing crime and citizens’ calls for police services (Sherman & Weisburd, 1995).

In the Minneapolis Hot Spots Experiment, Sherman and Weisburd (1995) used “hot spots” as the unit of analysis rather than using patrol beats or neighborhoods. They argued that most of the crimes are clustered in very specific locations, called “hot spots.” Thus, they argued that instead of having marked cars randomly patrolling around large geographic areas to deter crime, intensifying routine preventive patrol in crime “hot spots” was likely to result in crime decrease in such locations (Sherman & Weisburd, 1995, p.626). From this perspective, the experiment tested the effects of preventive patrols in 110 crime hot spots. The researchers randomly assigned 55 hot spots to the experimental group and

these locations received almost two to three times as much extra patrol as the control sites.

After adequate implementation of the experiment for ten months, the researchers observed there was an important difference between the intervention and control conditions in terms of calls for service and disorders in the “hot spots.” They observed there was 10% to 12% reduction in calls for service to the police in intervention sites compared to control sites. Sherman and Weisburd (1995) argued that their findings showed “clear, if modest, general deterrent effects of substantial increases in police presence in crime hot spots” (p. 645). Minneapolis was a turning point in policing research because the experiment found “evidence” indicating that police patrol in fact can affect crime and level of disorder within crime hotspots (Weisburd & Braga, 2006).

Braga and Bond (2008) also contributed to the growing body of place-based crime prevention research by conducting an experimental study in Lowell, Massachusetts. They integrated hot spots policing with problem oriented policing strategy in their randomized controlled trial. They identified 34 hot spots of crime and disorder to test the effectiveness of location based, problem-oriented policing. A total of 34 crime and disorder hot-spot areas were assigned to control and experiment locations by matching pairs from each group. Situational crime prevention was employed on hotspots in the experimental sites by changing their physical features. At the end of experiment, they observed a reduction in calls for service in the intervention hot spots, relative to control areas (Braga & Bond, 2008).

Experimental research on place-based crime prevention has continued to play a significant role in the growing popularity of hot spots policing. The usage of computerized crime mapping has revolutionized the nature of policing and has increased the police departments' ability to identify crime hotspots (Braga & Weisburd, 2010). In recent years, many police departments throughout the United States have adopted the hot spots policing strategy as a crime prevention measure (Weisburd & Braga, 2006). Following the testing of hot spots policing at different sites, empirical research findings support the conclusion that it has a significant impact on crime reduction (Braga, 2005; Braga, Papachristos, & Hureau, 2012; Braga & Bond, 2008; Taylor, Koper & Woods, 2011; Weisburd, 2005; Weisburd & Green, 1995).

One of the most recent studies on the effectiveness of hot spots policing was conducted by Braga and colleagues (2012). In their meta-analysis on hotspots policing programs, they analyzed 19 hot spots policing studies. Five of these studies included more than one hot spots policing intervention, so the total number of distinct experimental and quasi-experimental studies in the meta-analysis reach 25. Ten of the 19 studies included in the analysis used randomized controlled trial designs, and the remaining nine studies used quasi-experimental design as their research strategy (Braga et al., 2012). Of all 25 hot spots policing interventions, 20 of them recorded significant reductions in crime, whereas the overall effect size was small to moderate. In a supplemental analysis, the researchers concluded that use the problem oriented policing interventions, which aim to alter the underlying crime conditions at hot spots, have a larger overall mean effect size, relative to the programs that solely rely on increasing the number of patrol cars or foot patrol on spots (Braga et al., 2012, p. 24). The overall meta-

analysis also showed diffusion of crime control benefits effects, which means crime control benefits diffused into the unprotected areas, or nearby areas around hot spots benefited from crime reduction efforts.

In their study of the growth in randomized experiments in policing, Braga, Welsh, Papachristos, Schnell, and Grossman (2013) assessed the growth of randomized controlled trials in policing, and analyzed the co-authoring and mentoring connections of the scholars. They found that the experimental studies in policing were carried out by a small number of scholars. They also found that the experiments in the areas of crime hot spots, restorative justice, domestic violence and drug abuse interventions played a major role in the growth of policing experiments. When they evaluated the experiments based on their completion date, they found that a notable growth of experiments occurred in the 1990s and 2000s. The number of completed experiments during these two periods was 53, and made up 85.4 % of all randomized controlled trials in their evaluation study (which included a total of 62 RCTs). According to the study, a total of 24 randomized experiments were completed between the years 1990 and 1999, whereas the number of completed policing randomized controlled trials between the years 2000 and 2011 was 29 (Braga et al., 2013).

In one recent study, Mazerolle and colleagues (2013) conducted the first randomized field experiment on procedural justice, the Queensland Community Engagement Trial. They tested the effect of procedurally-just policing on attitudes towards drunk driving, perceptions of compliance, and citizen satisfaction with the police. They asked Australian police to implement the key ingredients of procedural

justice during their random breath testing operations. They randomly allocated 30 operations to control and 30 operations to experimental conditions. They found significant differences between the experimental and control groups. Citizens in the experimental condition were 1.24 times more likely to report that their perceptions on random breath testing and drunk driving had changed than the control group. For the other two key outcome measures, citizens who received the experimental condition reported small but higher level of compliance and satisfaction with the police, than respondents in the control group. Their findings supported the idea that citizens' perceptions of the police are affected by officers' demeanor and the way in which police interact with them (Mazerolle et al., 2013).

The findings of the above mentioned studies indicate that there is a growing interest in policing experiments in recent years, specifically in the United States. It has been argued that police departments are more open to researchers and willing to engage in experimental studies today (Braga et al., 2013). Petersilia (2008) suggests that experimental studies have a much greater impact on policy makers than other methods, so rigorously designed randomized experiments studies often receive support from policy makers (p. 351). From this perspective, it can be argued that it is easier to conduct randomized experiments today than in the past and more experimental studies are needed to assess criminal justice interventions.

CHAPTER 4: METHODOLOGY

4.1 Data Collection

In this study, automobile drivers who encountered traffic officers for speeding violations were surveyed. The study was limited to police-citizen encounters that occurred during routine speed controls operations. The use of speed control operations had a number of research advantages: conducting the research after the operations provided easy access to drivers; the planned traffic stops facilitated the randomization process; and the researcher had an opportunity to observe the operations to ensure whether the treatment conditions are delivered as planned. Based on the enforcement schedule in effect, the Adana Police Department carried out speed control operations 7 days a week depending on the weather conditions¹ during the morning and afternoon periods. All the stops were conducted inside the city (not on highways or rural areas).

In total, 702 automobile drivers, who were ticketed for exceeding speed limits in the City of Adana, were asked to participate in the survey. In Turkey, automobile drivers are persons who have a valid driver's license issued by the government. In order to obtain a driver's license in Turkey, a citizen must be at least 18 years of age or older, have no mental problem, and have the required cognitive and psychomotor capacity for driving. Persons who were excluded from the study included individuals who were sanctioned for any violation other than speeding.

¹ Because of traffic safety issues, APD's traffic units do not conduct speed operations when it is raining.

4.2 Research Setting

The data for this study was collected during routine speed control operations within the city boundaries of Adana, Turkey in the spring of 2013. The city of Adana is a highly populated city located in the Southern part of Turkey and it is the administrative seat of the Adana province (which has a population of 2.1 million). Adana city is the fifth largest city of Turkey with a population of almost 1.6 million, encompassing approximately 1,000 square miles. The population density of Adana is 152 people per square kilometer, and this is above the Turkish average of 97 people per square kilometer. The city consists of five central districts: Seyhan, Yuregir, Saricam, Cukurova and Karaisali (“Adana Genel Degerlendirme,” n.d.).

Adana was selected for conducting the trial because it is a highly populated and ethnically diverse city. According to 2011 statistics, approximately 61% of the Adana residents are from the Adana province, 4% are from the Mersin Province, 3.5% are from the Osmaniye province, and the remaining 31% of the residents are from the other provinces of Turkey. Adana is a major agricultural and commercial hub of the southern Turkey, so it attracts migrants, who are seeking for job opportunities, from other cities of Turkey. In addition, some key demographic features of Adana are close to the Turkish average. According to the 2011 Turkish Statistics Institute address based population survey, citizens of Adana had a median age of 29.3 years (median age for Turkey is 28.9) and a median household income of \$15,521 (average median household income for Turkey is \$15,137). The city’s warmer weather conditions were also a plus for conducting the study.

The number of registered vehicles in Adana in the year 2011 was 480,321 and

214,384 of these vehicles were passenger cars. The number of cars per 1,000 people is 102 for Adana, and this number is slightly below the Turkish average of 109 cars per 1,000 people. In 2011, a total of 4,222 road crashes occurred in Adana, and 95 people lost their lives and 6,935 people injured in these crashes. Average crashes per 10,000 vehicles are 88 for Adana, which is slightly above the Turkish average of 82 crashes per 10,000 vehicles.

The Adana Police Department (APD) agreed to work with the researcher to improve their communication with citizens and allowed the researcher to conduct a randomized controlled trial to achieve this goal. The Adana Police Department is the 5th largest unit of Turkish National Police with 6200 sworn officers. APD's traffic division is comprised of 350 traffic officers and 2 non-sworn officers. The hierarchy includes 1 division chief (3rd degree chief superintendent), 1 deputy chief (4th degree chief superintendent), 2 Superintendents, 2 Captains, 1 Lieutenant and 5 Sergeants, 24 Senior Police Officers, and 314 Police Officers.

The APD's traffic division's patrol units operates on 12-hour shifts (this shift model is called 12/24, officers work for 12 hours and rest for 24 hours), with approximately 60 officers assigned to each of the three shifts. Depending on personnel, approximately 18 patrol vehicles are in service on each shift. Road speed controls are a usual practice of Adana Police Department (APD). In the Adana province, 3829 speeding tickets were issued in October 2012.

Table 1: The demographics of the APD's Traffic Division ($N = 350$)

<i>Characteristic</i>	<i>Total n (%)</i>
Gender	
Male	335 (% 95.7)
Female	15 (% 4.3)
Marital Status	
Married	338 (% 96.5)
Single	12 (% 3.5)
Place of Birth	
Adana	133 (% 38.0)
Hatay	24 (%6.8)
Kahramanmaras	16 (%4.6)
Mersin	52 (%14.8)
Osmaniye	53 (%15.1)
Other	72 (%20.9)
Place of Birth by Region	
Aegean	9 (%2.6)
Black sea	8 (%2.3)
Central Anatolia	14 (%4)
East Anatolia	10 (%2.9)
Marmara	13 (%3.7)
Mediterranean	278 (%79.4)
South-East Anatolia	18 (% 5.1)
Mean Age	42.02
Mean Years in the TNP	18.25

4.3 Research Questions and Hypotheses

In order to test the effect of procedural justice on citizen perceptions of police, five research questions were formulized. These are:

1. Does procedurally-just policing enhance citizens' overall perceptions of procedural fairness of police?
2. Does the procedurally-just policing have an impact on citizens' perception of procedural justice for the specific encounter?
3. Does procedurally-just policing alter citizens' perceptions of police respect?
4. Does procedurally-just policing increase the level of citizen satisfaction?
5. Does procedurally-just policing alter drivers' views on speed control operations?

In this research the following hypotheses were tested:

1. Citizens who experience procedurally-just traffic encounters will have improved views on procedural fairness of police in a general sense than citizens who experience "routine" traffic enforcement.
2. Citizens who experience procedurally-just traffic encounters will be more satisfied from the encounter than citizens who experience "routine" traffic enforcement.
3. Citizens who experience procedurally-just traffic encounters will have improved perceptions of police respect in relation to the encounter than citizens who experience "routine" traffic enforcement.
4. Citizens who experience procedurally-just traffic encounters will have improved perceptions of procedural justice for the specific encounter relative to citizens who experience "routine" traffic enforcement.
5. Citizens who experience procedurally-just traffic encounters will have improved views on speed enforcement relative to citizens who experience "routine" traffic enforcement.

4.4 Research Design

4.4.1 Introduction

This study used a randomized controlled trial (RCT) design. When properly executed, RCT's provide the most effective way to control for confounding variables (Shadish et al., 2002; Piquero & Weisburd, 2010). Since the random assignment equalizes the groups on all other variables in theory, outcome differences between the groups can be attributed to the presence or absence of the intervention in a RCT design.

By using a randomized controlled trial design, this research aimed to examine whether incorporating procedural justice components into the existing speed enforcement practices could alter citizens' general perceptions of police and existing speed control operations. The units of analysis for this study were police-citizen encounters. Hence, drivers who were stopped by the Adana Police Department for speeding violations were randomly assigned to either a control group or a treatment/experimental group. Subjects in the experimental group received the procedural justice policing intervention during traffic stops, while subjects in the control group experienced business-as-usual traffic stops.

The major difference between the experimental and control conditions was the delivery of the scripted message. There were two teams of officers: a treatment team of officers and a control team of officers. The treatment team of officers delivered a scripted message to the drivers and followed procedural justice principles (see Appendix B). The officers who interacted with the drivers in the control group asked for driver's documents without delivering the treatment. In other words, control group police-citizen interactions represented the routine ways traffic police have traditionally interacted with drivers. The

drivers in both groups (treatment and control) received the same outcome, a speeding ticket. After completion of the stop, drivers were asked whether they were willing to volunteer to answer a 20-item questionnaire.

4.4.2 Procedures before Speed Control Operations

Before conducting the study, the researcher went through several bureaucratic and operational procedures. At first, the researcher met with the commissioner and the deputy commissioner of the Adana Police Department to brief them about the research. After obtaining their approval, the researcher contacted the traffic division to inform them about the approval of the commissioner and the scope of the study. A meeting was held with the head of the traffic division and his deputy to brief them about the details and researcher's needs. The researcher asked whether officers could be assigned to specific shifts based on researcher's needs and speed control operation locations could be changed if needed. The head of the traffic division stated that they could assign some officers to some shifts based on researcher's needs. However, he noted that the traffic patrol officers who handle traffic stops have a specific enforcement schedule and are not free to stop cars at random locations. He added that the TNP headquarters generate the speed control schedule, so they are not authorized to change the speed control locations. The chief of the traffic division shared the operation schedule, which included dates and locations, with the researcher after this meeting.

The deputy chief of the traffic division arranged a meeting with the officers who would be conducting the speeding stops. At this meeting, he introduced the researcher to the officers and emphasized that the study was supported by the commissioner and

commanding staff. Then, the researcher provided a briefing to the police officers in order to inform them about the purpose of the study.

The researcher also had the opportunity to learn more about speed control operations at this meeting. The officers were asked whether all the drivers are ticketed during the speed control operations or not. They stated that they are trying to be fair and they issue a speeding ticket to all the drivers who exceed the speed limits. However, they do not issue a ticket to drivers who have health emergencies, and some people like prosecutors or judges are not ticketed on the scene as well. They stated that they filled out a report for judges or prosecutors' violations and sent those reports to the Department of Justice of Turkey. Unfortunately, these exceptional situations allowed for the possibility of differential attrition from the control and experimental treatment conditions. This issue is further discussed in the randomization and sampling strategy section.

At the end of the meeting, officers were asked if any of them would like to deliver the experimental conditions. Eight out of 17 volunteered to deliver the experimental conditions and 9 out of 17, including 2 female officers, stated that they did not want to deliver the experimental conditions. The researcher selected 6 officers from the 8 officers who volunteered to deliver the experimental condition based on their shift availability. The remaining 11 officers were assigned to deliver the control conditions. A total of 3 officers (1 officer per shift) were selected as stopping officers among the 11 control officers based on seniority criteria and these three officers were responsible for carrying out the randomization process. The "stopping officers" were requested not to interact

with the drivers in the experimental group and to follow the control conditions if they needed to interact with the drivers in the control group.

Table 2: Demographic Characteristics of Participating Police Officers ($N=17$)

Characteristic	Total (n=17)	Control Officers (n=8)	Experimental Officers (n=6)	Stopping officers (n=3)
	n (%)	n (%)	n (%)	n (%)
Gender				
Male	15 (88.25%)	6 (75%)	6 (100%)	3 (100%)
Female	2 (11.75%)	2 (25%)	-	-
Years in the TNP				
0-9	1 (5.88%)	1 (12.5%)	-	-
10-19	8 (47.06%)	5 (62.5%)	3 (50%)	-
20+	8 (47.06%)	2 (25%)	3 (50%)	3 (100%)
Age				
20-34	4 (23.53%)	3 (37.5%)	1 (16.7%)	-
34-50	10 (58.8%)	3 (37.5%)	5 (83.3%)	2 (33.3%)
50+	3 (17.67%)	2 (25%)	-	1 (66.6%)
Highest Level of Education				
High School	1 (5.88%)	1 (12.5%)	-	-
Two-year College	14 (82.33%)	6 (75%)	5 (83.3%)	3 (100%)
Four-year College	2 (17.67%)	1 (12.5%)	1 (16.7%)	-
Place of Birth				
Adana	6 (35.3%)	3 (37.5%)	2 (33.3%)	1 (33.3%)
Mersin	1 (5.88%)	-	1 (16.7%)	-
Osmaniye	4 (23.52%)	1 (12.5%)	2 (33.3%)	1 (33.3%)
Other	6 (35.3%)	4 (50%)	1 (16.7%)	1 (33.3%)
Mean Age	40.94	39.12	41.33	45
Mean Years in the TNP	18.76	17.87	17.83	23
Mean Years in the APD traffic	5.52	6.12	4.16	5.3
Mean Years in the APD	7.98	7.62	6.66	11.6

Once officers were assigned to the groups, they were invited to a training session. The initial training for the officers delivering the control condition included a short briefing to inform them about their role in the study. The selected patrol officers and officers in the radar equipped patrol cars also attended this training session. The researcher told these officers that they should conduct regular speeding stops only, act according to their everyday behavior patterns, and that their verbal encounters should be in accordance with standard practices. They were also told that they were not expected to administer any “special” treatment to the drivers.

The officers delivering the experimental conditions received more extensive training. This training was designed to outline the procedures for the operation, and explain the significance of the execution of the treatment condition. Specifically, the officers were forewarned about the importance of recounting the script to the drivers. During the training, the researcher taught the officers how to interact with the driver in a procedurally just manner. They were provided instructions on how to stop a vehicle, how to deliver the scripted message and how to behave towards drivers. They were advised to keep a polite and respectful demeanor in their interactions with the drivers. In order to make them fully understand a procedurally just traffic stop, the researcher also acted out an imaginary stop scene in front of the officers. The officers were also given information about the Queensland Community Engagement Trial.

Throughout the entire training and at the very beginning of the study, some officers were suspicious about the purpose of the research. They were trying to understand whether this is an actual scientific study or a covert discipline investigation.

In addition, some of the officers stated that they were concerned about the consequences of the study. They stated that the experimental procedure could put an extra burden on them if it would become a standard procedure for traffic stops. In order to address their concerns, officers were told that this was simply a scientific research study, individual officer performance would not be shared with the supervisors, the researcher would not have the power to change the procedures for traffic stops, and any changes were not expected in the short term. In order to gain officers' trust and "break the ice" between the researchers and the officers, the researcher also offered chocolate bars to the officers who were assigned to the operation before trials. In addition, more information was given to them regarding the research and previous studies conducted by the researcher.

4.4.3 Experimental Condition

Previous studies operationalized procedurally-just policing as having elements that assesses neutrality and fairness, trust, citizen participation, dignity, and respect (Mazerolle et al., 2012; Sunshine & Tyler, 2003; Tyler, 2006). In this study, the key components of the procedural justice model (neutrality, trust, participation, dignity-respect) were incorporated into the experimental condition. The officers who encountered the drivers in the treatment group delivered these four components of the procedurally-just encounter before issuing a speeding ticket. Basically, the experimental manipulation involved the delivery of a scripted message and longer dialogues than normal with drivers.

In the Queensland Community Engagement Trial, Mazerolle and colleagues (2012) operationalized previous research on procedural justice and police legitimacy by

developing an easy-to-implement scripted message to enhance the existing routine of the police delivered Random Breath Testing procedure. Their procedural justice policing intervention and procedural justice script was slightly modified for the Turkish context and adapted for use in this study. A printed postcard-sized aide-memoire (see Appendix B) containing the full text of the scripted message (with key points highlighted) was provided to each officer conducting the speed control. The officers were asked to memorize the script if they could. If they could not, notecards made it easier for them to recall the key elements in the script.

In the experimental procedure, officers started their interaction with the citizens by giving them information about the number of road traffic deaths and injuries in Adana in 2011. They also provided statistics about speed related deaths in Turkey. They tried to explain to drivers that the traffic police were conducting these operations to make roads safer and save peoples' lives. The drivers were also given the opportunity to share their thoughts regarding speed controls. Then, the officer informed the driver about the violation, stated that a speeding ticket would be issued. After getting the person's driver's license and registration, a speeding ticket was issued and given to the driver. In sum, officers who executed the experimental conditions read the scripted message in a polite and respectful manner, and gave the drivers a voice before issuing a ticket. Furthermore, in order to maintain a more practical and mutually engaging interaction, officers were also encouraged to adopt their own personal style while delivering the scripted message. It was observed that some officers generated a friendly environment while delivering the experimental condition.

4.4.4 Control Condition

The “routine” procedure did not involve the delivery of a message prior to issuing a speeding ticket. In the routine procedure, no explicit instructions were given to guide the officer’s demeanor. Officers behaved in whatever manner they typically used to interact with citizens. In the routine procedure a speeding stop took place in the following order. First, an officer approached the driver after stopping the car, informed the driver that he or she exceeded the speed limit without listening the driver’s excuse, apology or concerns. Then, the officer asked for the person’s driver’s license and registration, and went back to the patrol car to issue a ticket, wrote a speeding ticket, handed it to the driver and released the stopped vehicle. At the end of the stop, the officer went back to the patrol vehicle after completion of the stop.

4.4.5 Randomization and Sampling Strategy

In this study, randomization was achieved through color-lined note cards. Sherman and Berk (1984) used a similar randomization method in their Minneapolis Domestic Violence Experiment. In order to better understand the randomization method in this study, one should know the Minneapolis Domestic Violence Experiment and its randomization strategy.

In 1981, Sherman and Berk started the experiment with the support of Police Foundation and Minneapolis Police Department to find the most effective police response to domestic violence incidents. They achieved randomization through a lottery selection design. In other words, the police responses to domestic violence incidents were determined by the lottery, which included three different handling methods. These

strategies were: (1) arrest of the offender, (2) mediating the dispute, (3) sending away the offender from the scene for eight hours. In order to randomly assign cases to the three conditions, the officers in the experiment were given a pad of report forms, which were color coded for these three different handling strategies. When an officer on duty encountered a domestic violence case, he was required to take the action that was indicated by the report form on the top of the pad (Sherman & Berk, 1984). However, the officers in the Minneapolis study were known to subvert the randomization process. The well-known problems with the random assignment of the Minneapolis study can be listed as follows.

First, when an attempt of assault had occurred or a victim persistently demanded an arrest, officers subverted the randomization and arrested the offender. Second, some officers forgot to carry the given report pads with them while on duty. Third, in complex situations officers were confused about the application of the experimental rules or there were some incidents that were not covered by the experiment's rules. Fourth, a plan to monitor the randomization with ride-along observers failed due to low incidence of cases daily. Finally, some officers violated the card order by switching the assignment to obtain a treatment they wanted to apply.

Some safeguards were put in place in this experiment to prevent subversions that were seen in the Minneapolis Experiment and to insure that the cases were randomized appropriately. These safeguards included the tracking of the numbers of drivers assigned to the control and experimental conditions and comparing these with the actual stops, observing the stops, selecting experimental officers from volunteers, giving more

responsibility to senior officers, and recording some demographic information for all stopped drivers. These safeguards are discussed in detail later in this chapter.

As already noted, Minneapolis Domestic Violence Experiment called for each officer to carry a pad of report forms, color-coded for the three different police responses to domestic violence cases. In this study, several note cards (each card included pre-ordered lines with blue or white colors) were prepared by the researcher and were given to the officers on patrol who waved the drivers off to the side of the road during the operations. The study design called on these officers to carry these note cards during speeding stops and asked them to write down the plate numbers that they received from the radio to the lines provided in successive order. Each time the officer who initiated the stop received a plate number for a speeding violation, he wrote down the plate number of the car on the subsequent line. While the driver was waiting for the officer by the side of the road, the officer who initiated the stop asked either a member of the treatment team of officers or a member of the control team of officers to start the encounter based on the color of the line. To illustrate, when the color of the line where the car's plate number was written was blue, the officer delivered the experimental intervention and interacted with the driver, and when the color of the line was white, the officer would follow the "routine procedure" in interacting with the driver.

The Queensland study anticipated that fewer drivers would respond to the control operations, so they distributed 12000 surveys in the control operations and 9000 surveys in the experimental operations (Mazerolle et al., 2012). In this study it was also expected that fewer drivers in the control group would participate in the survey. The pilot study

conducted by the researcher revealed that drivers in the experimental group were more likely to participate in the survey than the controls (the response rate for the control group was almost 60% and for the experimental group it was 80%). Thus, more drivers were assigned to the control condition than the experimental condition in order to have equal numbers of respondents in both groups².

The design of this study involved a randomization process in which drivers who were assigned to the experimental group would receive the procedurally just policing properly. The target sample size was about 700 cases, with a split of 300 drivers to the experimental group and 400 to the control. With this sample size, we were expecting to reach 250 responses for each group. However, the randomization³ process did not produce the desired group sizes exactly due to the exclusion of some drivers (explained further below). Because of the exclusions, we had less than 700 eligible stops after completing the 40th operation. In order to reach 700 eligible stops, an extra operation was conducted and after the 41th operation we end up having a 702 eligible speeding stops.

The design of this study entailed the exclusion of drivers who did not receive a speeding ticket or who were stopped and ticketed for other types of violations. Thus, the officers stopping the cars were asked to exclude two types of cases before randomization: non-speeding stops and speeding violations because of health emergencies⁴. In addition

² Shadish, Cook & Campbell (2002) suggest that unequal sample sizes can complicate the estimation of effects, make the statistical analysis more sensitive to departures from homogeneity of variance, and jeopardize power as the split exceeds a ratio of 2:1 or 3:1 (p.297).

³ According to Shadish et.al. (2002), it is extremely unlikely to form equal sample sizes by a simple random assignment, particularly when the sample of units is small.

⁴ Since the officers in the radar equipped vehicle informed the “stopping” officers about the type of the violation before the actual stop occurs, the randomization officers were able to detect and exclude non-speeding stops from randomization. The officers in the radar-equipped vehicle were also able to inform the

to these two situations, there were some other exceptions in which the drivers were not given a speeding ticket. According to departmental procedures, some individuals such as judges or prosecutors, or other drivers who have reasonable excuses should not be ticketed, instead a report should be filled out for their violations. Therefore, these cases should have been excluded before the randomization process began as well. However, unlike the first two situations (non-speeding stops, and speeding because of health emergencies), officers did not know anything about the occupational position of the drivers unless they interacted with them. Since the decision about random assignment had already been made at the time of interaction, there was no way to single out the drivers who would be exempt from speeding tickets before randomization.

Nevertheless, the interactions with all drivers, including the privileged, commenced as designed, but the officers did not follow either the control or experimental condition after the privileged drivers disclosed their occupational position. The officers notified the researcher about such situations after the release of such drivers. Consequently, the drivers with immunity to traffic tickets were assigned into a group at the very beginning, but were dropped afterwards for the analysis. This situation, unfortunately, allowed for the possibility of differential attrition from the experimental and control conditions.

After the initial exclusion of 41 drivers (including 3 drivers who had health emergencies and 38 drivers who were stopped for other types of violations), a total number of 702 drivers were assigned to either the control or experimental condition (see

officers about health emergencies before the stop, because the drivers who were rushing to the hospital were using emergency flashers and this was a clear indication of a health emergency.

figure 1 for the flow diagram). Therefore, randomization resulted in a total of 305 stops of motorists in the treatment group and 397 motorists in the control group.

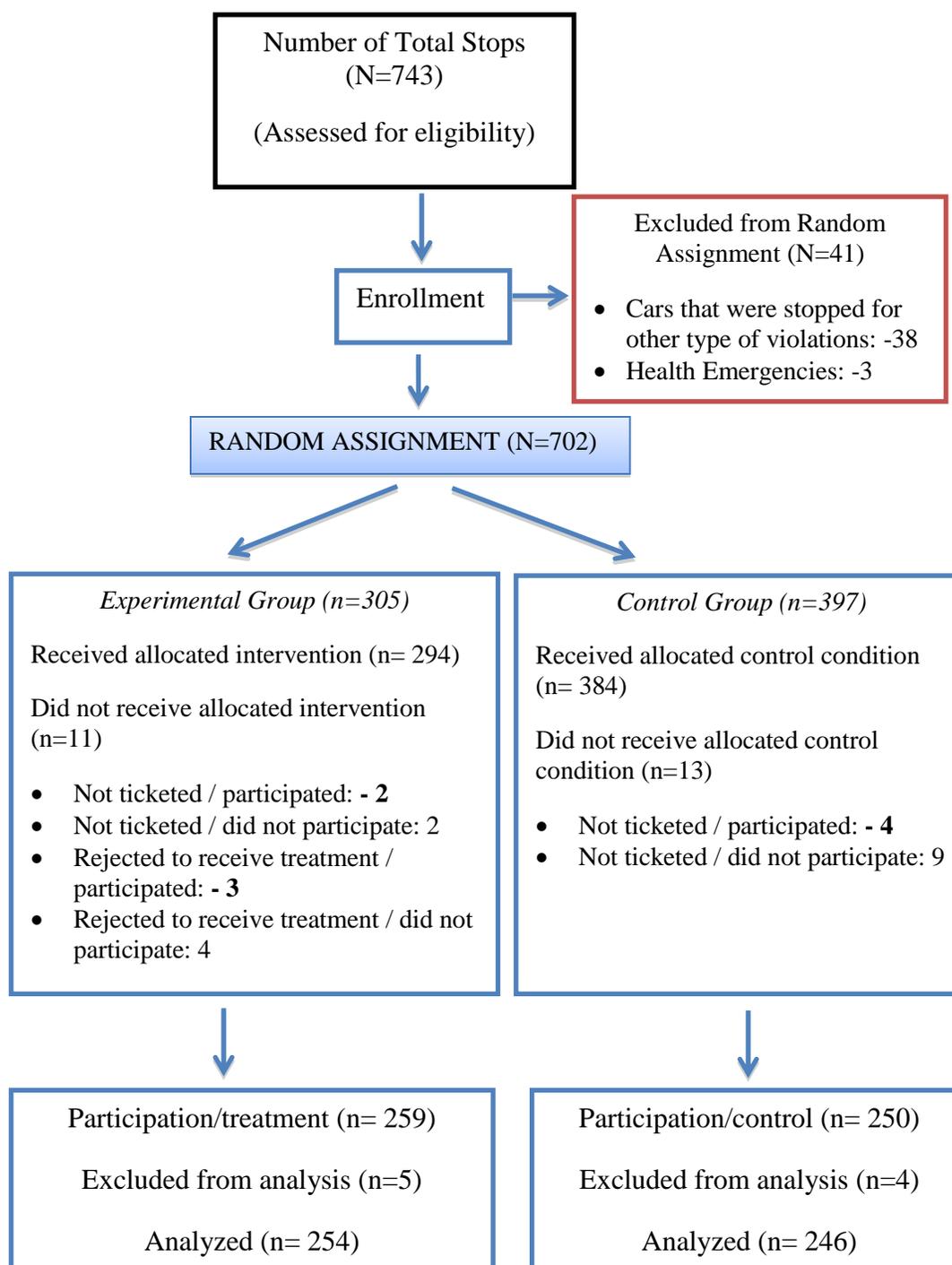
After the randomization process, a total of 24 drivers were also excluded from the sample because they did not meet our inclusion criteria. To be included in the sample, drivers must have been ticketed for speeding and if they were assigned to the experimental group, they must have received the experimental treatment. A total of 17 drivers were not ticketed due to the departmental policies⁵ after randomization and 7 drivers did not want to receive the treatment⁶. After the exclusion of these 24 ineligible cases, the number of respondents retained for analyses dropped to 678.

The exclusion of 24 cases after randomization also affected the group split. The total number of drivers assigned to the control group was 397, but with the exclusion of 13 cases a total of $n=384$ stops of motorists were included in the study for analysis. The total number of drivers assigned to the treatment group was 305, and with the exclusion of 11 cases a total of $n=294$ motorists were included in the treatment group for analysis. With $N=702$ cases and a two-tailed $\alpha=.05$ test, the statistical power of this design to detect a small effect size was .752. For both medium and large effect sizes, the statistical power should exceed .999 (Lipsey, 1989).

⁵ Some privileged people such as judges or prosecutors, or some drivers who had health emergencies were not included in the study because they were not ticketed due to departmental policies. Since the research team learned which drivers were not ticketed due to their privileges after the stop, there was no available method for excluding these individuals before the randomization.

⁶ Seven drivers who were assigned to the experimental condition stated that they did not want to listen the officer and wanted to be ticketed immediately without further explanation. Among these 7 drivers, 3 of them agreed to participate in the survey.

Figure 1. The flow diagram of the Adana police-citizen encounter RCT



4.4.6 Strategies Employed to Ensure the Integrity of Random Assignment

It has been argued that, random assignment procedures may not be always ideally implemented in the field because of ethical or practical concerns (Berk, Smyth & Sherman, 1988). For instance, Sherman and Berk (1984) acknowledged that they encountered with some problems during the implementation of random assignment procedure in their Minneapolis Domestic Violence Experiment. In the light of the Minneapolis experience, some measures were developed to ensure that the randomization was properly implemented in this study.

First, before each operation, the researcher wrote down the number of projected stops for each group. Then, the numbers of drivers assigned to the control and experimental conditions were tracked. At the end of each operation, these numbers were compared with the projected stops for the control and treatment groups. In very few cases, there was a slight difference between the projected number of stops and actual number of stops in each group. The officers were asked to identify the causes of these differences, and it was understood that the slight differences in the numbers were due to the excluded drivers (reasons for exclusions were mentioned above). When the number of excluded drivers was taken into account, it was seen that the numbers of stops match.

Second, in order to ensure the integrity of the randomization, research staff observed the stops and tried to detect whether officers singled out some drivers or refused to deliver the experimental condition when they were ordered to do so. In only one case, it was detected that an officer who was delivering the experimental condition did not want to interact with the driver believing that he does not deserve such a treatment. This

officer was reminded to follow the random assignment and then dismissed from his assignment in the experiment.

Third, the officers who had delivered the intervention were selected from volunteers, which affected the proper implementation of the experimental condition. Among a sample of 17 officers, 6 officers willing to deliver the treatment were recruited for the experimental condition. While the differences in the experimental and control officers' characteristics⁷ may raise questions about the treatment affect, this approach also helped to improve the opportunity to carry out the correct implementation of the experimental condition.

Fourth, the officers' eagerness to deliver the treatment conditions during the operations was also observed by the researcher. In order to ensure the integrity of the random assignment, the Minneapolis domestic violence experiment's research team had also planned to monitor officers with "ride-alongs" or "chase-alongs." Their plan was not practical because they had to ride for many weeks to observe a case that met their eligibility criteria (Sherman & Berk, 1984, p. 264). In the present study, the police determined the location and time of police citizen interactions, so it was easier for us to be present at the encounter scene. Unlike the Minneapolis Domestic Violence Experiment where they had to wait for hours to observe a single police citizen interaction, the researcher had the opportunity of observing the randomization process in one location during a relatively short period of time. Since the researcher was present at most of the stops in the Adana study, the officers were aware that their supervisors would be notified

⁷ Officer demographics are presented in research setting section for comparison

if they would intentionally subvert the design. As a result of these observations, one treatment officer who seemed to lose his desire to deliver the treatment was removed and replaced with another officer. On the other hand, the researcher did not only rely on disciplinary measures, but also tried to be friendly to the officers to maintain proper implementation of the randomization process. For instance, in order to bolster their morale officers were offered some chocolate bars before the operations.

Fifth, more responsibility were given to the senior officers (the officers who did the randomization was selected from senior officers) so that other officers felt that they have to follow the procedures strictly. Furthermore, it was predicted that high numbers of stops might interrupt our design, so the researcher asked the officers in the radar-equipped vehicle to halt speed checks if there were more drivers on the checkpoint than the number of officers.

Finally, some demographic data such as gender, age and violation type were also recorded for all stopped drivers. The comparison of the groups we later conducted by using these records gave us an idea about the integrity of the random assignment process. It was seen that the drivers of control group were similar to the drivers of experimental group in terms of age, gender, driving points accumulated, violation type and birthplace. Since the comparison of two groups revealed that they were equivalent to each other, we can reasonably assume that the randomization process was successful (The comparison of basic demographics of all experimental and control drivers are presented in Appendix D).

The non-participating drivers were asked about their reasons for rejection and responses from both groups were also compared. The responses of the drivers who

choose not to participate were coded in four categories including: whether (1) the driver refused to participate without stating any reason, (2) refused to participate just because of the ticket, (3) refused to participate in an aggressive manner, (4) argued with the officers or resisted, (5) rejected by stating that he or she did not have enough time, (6) refused to participate in a politely manner (see Appendix D for the breakdown of driver responses who did not want to participate the survey).

On the other hand, ideally, the randomization process should have been carried out by the researcher who accompanied the police. However, this was not possible because of the departmental policies and the design of the research. In order to avoid misunderstandings, that researchers were police officers, it was decided that the researchers should observe the encounters from a distant location. On the other hand, the department officials stated that traffic officers wear uniform and if the drivers would see a civilian in plain clothes assigning officers to their cars, they might object to this, and even may argue in the court that they received a traffic ticket because a civilian was ordering the officers to do so. Thus, the traffic patrol officers, who were responsible for waving the speeders to the side of the road (hereafter the “stopping officers”), helped to randomize cases to the treatment or control conditions by writing down the plate numbers of the violators on a colored-lined notecard. It should be noted that the officers did not allow researcher to see or store the notecards that had the plate numbers of the violators on them during the stops. This situation limited our ability to fully ensure the proper implementation of the random assignment via the notecards. However, the researcher believed that the above-mentioned strategies were effective in monitoring the integrity of the random assignment.

4.5 Conduct of the Trial

In order to conduct the trial, two teams of traffic officers were organized in each operation. The two officers who were in unmarked “radar” equipped police cruiser monitored traffic speeds by standing at the side of the road. The control and experimental officers set up a checkpoint at a further location on the roadway to issue citations. When the officers in the radar-equipped vehicle detected a speeding violation, they contacted the other officers via radio and transmitted the violator’s car type, plate number and the cited speed to them. Then, the driver was assigned to the experimental or control condition based on the previously described randomization method. Finally, the assigned patrol officer interacted the violator when he or she reached the checkpoint.

The Adana Police Department (APD) carried out the speed enforcement operations using a total of 3 radar equipped vehicles and 6 patrol cars at 15 different locations. Each day, speed control operations were conducted in the mornings and afternoons. The operations in the morning continued for 3 hours (from 9:00 am to 12:00 pm), while the afternoon operations continued for 2 hours (from 14:00 to 16:00 pm). Each operation was conducted by 1 radar equipped vehicle and 2 patrol cars (at the checkpoint). In the Adana randomized control trial experiment, officers interacted with approximately 743 drivers during the operations. The average stop time for the experimental group was approximately 5.5 minutes and the average stop time for the control group was approximately 4.5 minutes.

The Adana Police Department traffic units conducted 41 operations for purposes of the present research and a total number of 23 officers, including the 6 officers in the

radar-equipped cruisers, conducted the 41 speed control operations. Since the officers in the radar-equipped cruisers did not interact with the drivers, the total number of officers who interacted with the drivers was 17. In Adana, traffic units work in 12-hour shifts and there were 3 shifts. A total of 6 officers (2 officers from each shift) were trained to execute the experimental condition. The total number of officers who carried out the control condition was 7. There were also 3 officers involved in stopping the cars (1 officer from each shift) who were assigned to write down the plate numbers they heard on the radio, and to then begin randomizing the party to the treatment or control condition as well as waving the speeders to the side of the road. These officers, whom we called ‘stopping’ officers, were not trained on procedurally just policing interventions and did not deliver the experimental conditions. Thus, with these 3 officers, the total number of non-treatment officers who participated in the study was 10.

In field experiments, researchers often encounter problems while randomly assigning participants. According to Shadish and Colleagues (2002) some slippage from the original experimental plan is probable most of the time in such studies (p. 314). Minor diversions from the original plan also occurred during this research study due to ethical and operational limitations. First, some drivers were not ticketed due to departmental policies so this affected the randomization. Although these drivers were randomly assigned to the experimental condition, they did not receive the treatment. Second, in two stops, randomization was subverted because of a heated discussion with the driver. In one of these cases, the driver refused to listen to the officers and did not provide any of his documents when requested. The officer subsequently changed his attitude towards the driver and did not remain polite. Needless to say, such situations

might have caused an inadequate delivery of the treatment “dose.” Despite that, most of the officers who took part in the experiment seemed to be committed to the study based on the researcher’s observations.

Finally, while monitoring the randomization process, the researcher noticed that an officer who was delivering the procedurally just policing did not approach a car he was sent to. He wanted the control officers to ticket the driver of that car. When he was asked why, he stated that the model of the car was “Sahin” and the car a modified one, so probably the driver was a “jerk.” He believed that such people do not deserve lenient treatment and being kind to them would generate further problems (such as noncompliance). After the incident, this officer was replaced by a control officer and the researcher exerted an extra effort to monitor whether officers singled out such kind of drivers. Last, but not least, some drivers who were stopped for speeding were also fined for non-moving violations such as expired insurances or registration documents.

4.6 Survey Instrument

The automobile drivers who were stopped by the Adana Police Department traffic division for a speeding violation were asked to participate in the study through a 20-item questionnaire. First, drivers were asked about their perceptions of the police and policing in Turkey. The second section of questionnaire included questions about their recent interactions with officers during the stop. The third section included demographic questions. Each survey took 2 to 4 minutes to complete and the surveys were conducted in Turkish.

The survey element has two sections to measure three key concepts: satisfaction, fairness and legitimacy. In the first section of the questionnaire, drivers were asked about their beliefs about the police in general. The perception of the neutrality and procedural fairness of the police in general are measured by one item asking participants how much they agree or disagree with the statement that police could or would issue a traffic citation to the “privileged” people. For the general satisfaction with the police services construct, respondents were asked whether they were satisfied with the way police treat citizens. The respondents’ perceptions of police respect in general were measured by one question, which asks respondents about the politeness of the officers. Finally, another question in this section asked the respondent about their global confidence and trust in the TNP.

The second section of the survey included encounter specific questions. Satisfaction with the police were the key outcome variable of interest and it was measured by asking about the overall satisfaction of the police officer’s behavior and service during the encounter. Police politeness during the encounter was measured by one item asking participants how much they agreed that the officer was polite and treated the driver with respect. Another question in this section asked about the degree of trust in police, the perceived legitimacy of the traffic stop and the fairness of the police during the encounter.

The demographic questions included questions on age, gender, district of residency, education level, occupation and income. Prior experiences with the police may also affect citizen perceptions, so the participants were also asked about their contacts

with the police in the last 12 months. All responses in both sections were measured by using a 5-point Likert scale, with responses ranging from “strongly agree” to “strongly disagree” (for analysis purposes, *strongly agree* was coded as 5; *strongly disagree* was coded as 1). The questions on the survey instrument were drawn from prior research on procedural justice and have been found to be reliable and valid indicators of the outcome. Specifically, the questions about procedural justice were drawn from the Queensland Community Engagement Trial (Mazerolle et al., 2012). The questions about distributive and procedural fairness were adopted from the previous studies on police legitimacy (Sunshine & Tyler, 2002; Tyler & Wakslak, 2004; Tyler & Huo, 2002).

4.7 Measures

The effect of procedurally-just policing on citizen satisfaction, perceptions of speed control operations and the perceptions of procedural justice were measured by analyzing the differences in the outcome measures between the treatment and control group. The citizens’ perceptions of the police fairness were measured both for the specific encounter and for their general views of the police.

Tyler and Fagan (2008) assessed the legitimacy of the police through scales indexing three indicators: “obligation to obey to police directives and the law, trust and confidence in the police, and identification with the police” (p. 246). The four indices of legitimacy in Tyler and Huo’s (2002) California study were: obligation, cynicism, institutional trust and feelings about the legal authorities (p.108). Sunshine and Tyler (2003) operationalized legitimacy as “the perceived obligation to obey the directives of a legal authority and trust in the institution of policing and in individual police officers in

one's neighborhood" (p. 543). Reisig, Bratton, and Gertz (2007) operationalized legitimacy by indexing two main indicators: an obligation to obey the law and trust in the police. Mazerolle and colleagues (2012) operationalized legitimacy as the obligation to obey, the consistency of the law with the views of the public, and engagement with the police (p.12).

Finally, Tyler (2002) notes that for measuring legitimacy, two different approaches have been taken. The first measures overall public judgments based on trust and confidence in the police (this approach focuses on three key issues: obligation to obey, trust and confidence, and feelings). The second approach is based on the public's perceptions of the police and police behavior that are potentially related to police legitimacy such as performance in fighting crime, distributive justice, and police adherence to standards of appropriate conduct (Tyler, 2002, p.75).

As suggested by the research above, legitimacy is a complex concept, and despite the usage of some common indicators, the operationalization of the concept differs slightly from study to study. The previous studies found that procedural justice is one of the most important antecedents of police legitimacy (Mazerolle et al., 2013; Sunshine & Tyler, 2003; Tyler, 2006). That is to say, procedural justice plays an important role in shaping the citizen's perceptions of police legitimacy. Since the general literature on this topic suggests that police legitimacy is closely linked to procedural justice, it was thought measuring perceptions of procedural justice would also provide the researcher with data highlighting the 'stopped' citizens' perceptions of police legitimacy.

Perceptions of Procedural Justice (General-Encounter)

This study thus measured the drivers' perceptions of procedural justice both for the specific encounter and in respect to their general views. Previous studies measured perceptions of procedural justice by applying four key elements of procedural justice: neutrality and fairness, trust, citizen participation, dignity and respect (Mazerolle et al., 2012; Sunshine & Tyler, 2003; Tyler, 2006). Accordingly, four survey items reflecting the key elements of procedural justice were used in this study to measure the perceptions of procedural justice, in general. Namely, the respondents were asked how much they agreed or disagreed with the following statements: (1) "Overall, I trust police" (2) "I am satisfied with the way police treat citizens" (3) "Overall, police are polite when dealing with people" (4) "Police could not or would not issue a traffic ticket to the privileged people." Procedural justice was represented by a "latent variable"⁸ reflecting the indexes of trust, politeness, satisfaction and fairness.

The perceptions of the procedural justice specific to the SCO encounter were also measured. A latent variable named "procedural justice – encounter" was generated by using four items that asked about the extent of the respondents' agreement on the following statements: (1) The police officer was polite and treated me with respect. (2) Despite the outcome (speeding ticket), I think that stationary speed controls are necessary. (3) I felt that the police officer was trustworthy. (4) Overall, I was satisfied with police behavior and how I was treated during this encounter.

⁸ A latent variable is used when a concept cannot be measured directly but can be represented or measured by one or more variables (Field, 2004, p. 788).

Trust-General

General trust with the police was measured by using a single question in the survey. In this question respondents were asked to rate how much they agreed with the statement: "Overall, I trust police."

Neutrality and Fairness -General

The overall perceptions of police fairness and neutrality in the context of traffic services were measured by using a single question which asked respondents to rate how much they agreed with the statement: "Police could not or would not issue a traffic ticket to the privileged people."

Satisfaction-General

For the general satisfaction with the police items, respondents were asked whether they were satisfied with the way police treat citizens. The overall satisfaction of the police was measured by a single question in the survey that asked how much the respondents agree with the statement: "I am satisfied with the way police treat citizens."

Police Respect- General

The perceptions of the police respect in general were also measured. The drivers were asked how much they agree with the statement: "Overall, police are polite when dealing with people"

The second section of the survey element included items for measuring citizens' perceptions of police for the specific SCO encounter. Each survey item in this section

was asked to measure the citizens' perceptions of police in relation to the SCO encounter. Four out of five survey questions in this section were drawn from the Queensland study by Mazerolle and colleagues (2012) and adapted to the SCO context. The measured concepts in this section were perceptions of police respect, fairness-neutrality, trust in police, satisfaction with police and perceptions of SCOs.

Trust - Encounter

Trust in the encountered officer was measured by asking the drivers how much they agree with the statement: "I felt that the police officer was trustworthy."

Satisfaction – Encounter

Satisfaction with the encounter during the speed control operations was measured by a single question, which asked drivers to rate on a five-point scale (1=strongly disagree; 5=strongly agree) how much they agreed with the statement: "Overall, I was satisfied with the police behavior and how I was treated during this encounter." Higher scores on this question served as an indication of higher satisfaction with the encounter.

Police Respect – Encounter

Perceptions of police politeness and respect specific to the speed control operations was measured by a question asking the drivers how much they agreed or disagreed that the police officer was polite and treated them with respect during the encounter.

Neutrality and Fairness in Decision Making - Encounter

Respondents' perceptions of police fairness in decision making specific to the

encounter during the operations was measured by a single question, which asked drivers to rate on a five-point scale (1=strongly disagree; 5=strongly agree) how much they agreed with the statement: “I felt the police officer would do the same and issue a ticket to anyone in my situation irrespective of his/her status.”

Changed views of speed control operations

The research was also interested in the changed views of speed control operations and a single item also measured this outcome. The respondents were asked how much they agreed with the statement: “Despite the outcome (speeding ticket), I think that stationary speed controls are necessary.” The variables that were used in the study are presented in table 3.

Table 3. Variables in the Study

Variable	Type	Measurement Scale Type
Experimental/Control Condition	Independent Variable	Nominal
Age	Control variables	Ratio
Gender		Nominal
Prior Contact with the Police		Nominal
Education		Nominal
Driving points accumulated		Ratio
Income level		Nominal
Violation Type		Nominal
Having a police friend-relative		Nominal
Perceptions of Procedural Justice-General	Dependent variables that were used to address the research questions and test the hypotheses	Interval
Perceptions of Procedural Justice-Enc.		Interval
Changed views of speed controls		Ordinal
Satisfaction (general/encounter)		Ordinal
Perceptions of police respect (general/encounter)		Ordinal
Neutrality-Fairness in decision making (general/encounter)		Ordinal

4.8 Data Analysis

In this study, the data gathered from the surveys were analyzed in two phases: quantitative and descriptive. The paper surveys were entered into a computer file for analysis by using the STATA 12.0 data analysis and statistical software. The researcher also used the STATA statistical program to conduct statistical analyses. In this study, the following inferential statistics were utilized to address the research questions: independent samples t-test, linear regression (ordinary least squares regression-OLS), and ordered logistic regression. Statistical analyses were conducted using STATA, version 12.0, and the level of significance of the hypothesis testing was set at $p < 0.05$, which is widely accepted in academic research. The quantitative data analysis procedures were divided into five stages.

In the first stage, the characteristics of the participants were documented in order to provide a better description of the sample. This stage also provided an overview of the stops: the number of stops conducted, the response rate and the reasons for non-participation. The second stage incorporated the descriptive statistics needed to provide basic information (mean, standard deviation, and range) for the dependent and independent variables. In the third stage, the independent samples t-test was utilized to understand whether there were statistically significant differences between the control and treatment groups with regard to the dependent variables central to this study. In order to indicate the magnitude of the difference, Cohen's d was also reported at this stage. In the fourth stage, a linear regression model was used to confirm that the basic bivariate relationships in the t-test held up when we estimated an OLS with basic control variables.

In the final step, an ordered logit model was estimated in addition to a t-test and linear regression analysis.

The t-test is conventionally used to analyze the results from an RCT when the independent variable can be broken into two groups (because random assignment of cases to treatment and control groups removes the need to control for potentially confounding factors that are assumed to be orthogonal to the receipt of the treatment (independent variable) and the outcomes (dependent variables) provided the randomization is successful). When this assumption is met, the t-test yields unbiased and efficient estimates. Specifically, the independent sample t-test is appropriate when different groups of people take part in control and experimental conditions (Field, 2005, p. 270). In this study, the independent variable was comprised of two groups (experimental and control), and the dependent variables could be treated as interval level variables. Thus, given the characteristics of the dependent and independent variables in this study, the independent sample t-test was used as the basic statistical analysis method.

In a linear regression model, the dependent variable needs to be an interval level or continuous variable. Researchers usually tend to number categories sequentially and treat ordinal outcomes as if they were interval in order to use linear regression modeling (Long, 1997, p. 115). Since the N was large (498) in this study, the random component was assumed to be normally distributed (because of the central limit theorem). Thus, in addition to t-tests, an OLS model was run for this study. Running an OLS model provided an opportunity to confirm the initial t-test results and assess the success of the random assignment. If the randomization was successful, the regression results would not be expected to deviate much from the t-test results.

When a variable is ordinal (e.g. ranked from strongly agree to strongly disagree), the spacing between adjacent categories is very uneven, so running a linear regression for such variable might not be the best method for statistical analysis (Long, 1997). Thus, given the characteristic of the dependent variables in this study, relying solely on t-tests or OLS strategies for hypothesis testing may be misleading in terms of deriving conclusions about the validity of the intervention. Since the ordered logistic regression is used for assessing ordinal dependent variables and does not require a near-normal distribution for the dependent variable, it was believed to be the most appropriate method for analyzing the ordinal outcomes in this study. Nevertheless, both linear regression and ordered logistic regression were conducted to confirm whether these models also supported the bivariate relationships in the t-tests results. For both models, citizen satisfaction, legitimacy, and police fairness were regressed on the experimental treatment condition and other covariates such as age, demerit points, education, income serve as controls.

In order to capture the insights or issues that cannot be captured by closed questions, respondents were also be given the opportunity to share their ideas on speeding enforcement and their encounter with the police. The last question of the survey element included an open-ended question: “Would like to share any other comments or ideas about your encounter today?” Responses for this question were analyzed through examining patterns and trends. Driver responses were analyzed to see whether other indicators (that are not included in this study) of procedural fairness were reported. The words and phrases were coded into categories. After categorizing and coding the data gathered from the open-ended question, what is being said about the main themes were

explained. Furthermore, field observational notes were also shared at this section.

4.9 Strengths and Weaknesses

Since this research used the randomized controlled trial (RCT) method, the design was expected to control for many possible threats to internal validity. In a RCT, selection-related threats to internal validity are minimized by randomly assigning units of analysis to a treatment or to a control group (Langbein & Felbinger, 2006). Therefore, one of the strengths of this study is its design, which minimizes plausible threats to internal validity. In other words, it is believed that the design of this study has eliminated most alternative explanations for the outcome. On the other hand, it has been argued that many possible threats remain in RCT's depending on the nature of experiments (Shadish et al., 2001; McMillan, 2007). Researchers often encounter problems with the proper implementation of the random assignment and this could undermine the internal validity of a study. As already noted, the field observations and a post facto comparison of driver characteristics demonstrated that the randomization was implemented properly in this study, but even so, there might be still some potential threats to internal validity.

The potential threats could be listed as follows. First, the exclusion of some drivers may have caused a differential attrition problem. Drivers who did not want to receive the treatment and exclusion of some drivers due to their occupational position potentially produced differential attrition from the control and experimental treatments. However, given the small number of attritions, the researcher does not expect that the differential attrition would pose a significant threat to internal validity. Second, some drivers might simply be biased on their views because of prejudice against the police.

Third, there might be underreporting of their perceptions due to the fact that these interviews were conducted right after their encounters and drivers might think that police could access the information that they reported. Consequently, the researcher acknowledges that some of these factors may have caused internal validity problems.

One of the strength of the Adana RCT is the high response rate across both experimental and control conditions. In Queensland Community Engagement Trial (QCET), Mazerolle and Colleagues (2012), stated that one of the weaknesses of their study is the low response rate and they suggested that future replications of the trail should seek to increase the response rate. The QCET handed out the surveys to the drivers with a paid envelope and expected them to return the completed surveys. Instead of handing out the survey to the drivers and asking them to fill out the surveys at their home, we asked drivers if they would like to fill out the survey right after the stop. It is believed that we achieved a higher response rate than QCET by using a shortened survey and by asking driver opinions right after the stops.

In order to avoid study bias, several prevention measures were also taken. First, in order to learn about their prior experiences with the police, drivers were asked whether they had any contacts with police in the last 12 months. Second, in order to reduce underreporting, drivers were not asked survey questions in front of the police. Surveys were not conducted at the exact location of the encounter, and this ensured no officer was around while conducting the survey. Finally, subjects were informed about the purpose and confidentiality of the research study prior to each survey and were assured that their

responses would not be shared with the police or any other government officials under any circumstances.

According to the Shadish and colleagues (2002), external validity provides an answer to the question of whether a study's finding can be generalizable to other times, places, and circumstances (p.87). Maxfield and Babbie (2009) contended, "one of the advantages of field experiments in criminal justice is that, because they take place under real-world conditions, results are more likely to be valid in other real-world settings" (p.122). From this perspective, it can be argued that this study is strong in external validity because the experiment took place under real traffic stop conditions. The following reasons support the external validity of the study.

First, the study was conducted during the actual stops with real police officers and the drivers were randomly selected after actual violations. Second, our experimental intervention procedure was clearly defined, and officers' actions have been carefully monitored. Thus, the researcher is confident enough that the intervention procedures were executed properly. Third, a usual traffic stop in Turkey is conducted as the same way as we did in this study. Therefore, the researcher does not expect a significant change in study's results if the intervention will be applied in a different jurisdiction by a different department in Turkey. Nevertheless, although the study and its results may not be generalizable to all police-citizen encounters (where citizens encounter the police for different reasons, such as asking for help, witnessing a crime or being the victim of the crime), it is believed that the results may be generalizable to traffic encounters in Turkey, and perhaps traffic encounters in other nations.

4.10 Ethical Issues and Protection of Participants

In this study, the drivers shared their positive and negative views of police. Based on the researcher's observations procedurally just treatment had a desirable impact upon citizen satisfaction. It was also observed that some drivers got upset because of the speeding ticket. However, it is important to note here that the researcher did not have any control over this process since the police department was already conducting these routine stops as part of their traffic enforcement duties. It should also be noted that the researcher did not have any control over the outcomes that drivers received (receiving speeding ticket or not). The researcher was not authorized to set, control, manipulate or change the APD's speeding enforcement schedules or procedures.

During the 41 speed control operations, APD officers stopped 743 drivers. The researcher did not interact with officers during stops; observed their encounters with drivers from a distant location. Before approaching to the driver, the researcher ensured that the stop is complete, the officer released the stopped vehicle, and none of the traffic officers is around the driver. When they encountered with the driver, they informed the driver about the purpose, confidentiality and voluntary nature of the research study (see attachment 5a). As part of their consent, participants were offered an oral agreement (see a copy of the consent form in Appendix E). Before starting the survey, it was also ensured that the driver's car is in a convenient location.

The surveys were conducted in Turkish. The survey instrument did not include any questions that could place the subjects at risk of criminal or civil liability or be

damaging to their financial standing, employability or reputation, if made public. In addition, the questionnaire did not include any questions to produce stress or anxiety.

The researcher also took additional steps to minimize any risk of harm to human subjects associated with the collection of these data. First, participation to survey was completely voluntary, and respondents had the right to refuse to answer any question and to quit the survey anytime with no penalty. Second, any drivers who were under arrest, custody or not free to leave the scene were not surveyed. Third, survey respondents were not asked to answer questions in front of the police. Surveys were not conducted at the exact location of the encounter, and were conducted in a location where participants' responses cannot be seen or heard by the police. Finally, no personally identifiable information were captured and included in the 19-item questionnaire such as subject's name, home addresses, driver's license number or any other identifying information. However, the survey captured the basic demographic data including age and gender that were used to provide generalizable sample characteristics. Thus, given the generalizability of these questions, it was not possible to link the response to any one respondent.

All of the surveys were stored in a locked box to which only the Principal Investigator had access. Survey data were transcribed on to Microsoft Excel 2007 in the Principal Investigator's personal computer. The data stored on the computer was only accessible to the Principal Investigator and safeguarded by a 32-bit password. The data stored on the principal investigators personal computer was not be shared with anyone from the Adana Police Department or external researchers. It should also be noted that

Rutgers University Institutional Review Board reviewed and approved the human subject protections protocol of this study.

4.11 Description of the Sample

This section includes the demographic characteristics of participants. As already noted, participants of this study were drivers who were stopped by APD's traffic units because of speeding violations. A total of 702 drivers were randomly assigned to either experimental and control conditions. The demographic characteristics of the all drivers who were assigned to either control or experimental group were presented in Table 4.

Table 4. Demographic Characteristics of Drivers

Name	N	%	Mean	Min.	Max.	Total N
Age			36.74	18	75	633
19-24	75	11.85				
25-29	95	15.01				
30-34	109	17.22				
35-39	112	17.69				
40-44	78	12.32				
45-49	63	9.95				
50+	101	15.95				
Gender				0	1	672
Female = 0	78	11.61				
Male = 1	594	88.39				
Violation Type				0	1	
Exceeding the speed limit up to 30%= 0	527	77.73				678
Exceeding the speed limit 30% or over the designated speed limit= 1	151	22.27				
Demerit points accumulated within the last 12-months			6.37	0	90	673
0-10	556	82.61				
11 +	117	17.39				

Table 4 indicated that the study population contained fewer females than males. According to the Turkish National Police 2012 statistics, more than 18.9 million men were licensed to drive in Turkey, compared with 4.9 million women (“Turkiye’de her bes,” 2013). Thus, the men made up almost 80 % of the drivers on the road in Turkey. The study population contained more drivers between the ages of 35 and 39 than other age groups. Among the 633 drivers, 17.69% (112) were in the ‘35-39’-year old age group. In addition to the basic demographics of the drivers, the 2011 Turkish Statistical Institute (TUIK) census data for Adana City population (by birthplace) was compared with the sample and the comparison is presented in Table 5.

Table 5. Comparison of Sample with the Population of Adana City by Birthplace

Place of Birth	General Population of Adana (2011)	Sample (<i>n</i> =656)	
	%	<i>N</i>	%
Adana	60.89	407	62.19
Adiyaman	2.26	14	2.13
Diyarbakir	2.9	6	0.91
Elazig	1.55	6	0.91
Gaziantep	1	9	1.37
Hatay	1.2	18	2.74
Mersin	2.4	26	3.96
Istanbul	0.2	6	0.91
Kayseri	1	10	1.52
Malatya	1.2	11	1.68
Kahramanmaras	1.38	12	1.83
Mardin	4	15	2.29
Nigde	1.4	9	1.37
Siirt	1.7	5	0.76
Sanliurfa	4.13	10	1.52
Osmaniye	3.53	23	3.50
Other	9.26	68	10.36

Table 5 presents that roughly 62% of the drivers in our sample were born in Adana. The sample was quite representative of Adana City population because Adana born residents makes up almost 61 percent of the Adana City population.

CHAPTER 5: DATA ANALYSIS AND FINDINGS

In this chapter, the data analysis and findings of the Adana RCT are presented. The analysis of the quantitative data is presented in the first part of the chapter and this part is divided into five sections. The first section includes the results of the principal component analysis and the construct validity of the measurement scales. In the second section of the quantitative analysis, descriptive statistics that provide basic information (mean, standard deviation, and range) for the dependent and independent variables are presented. The third section includes the results of the independent samples t-tests. In order to indicate the magnitude of the difference between the samples, the results of the Cohen's d calculations will also be reported in this section. The fourth section includes two subsections: the results of the ordinary least square regression analyses and the ordered logistic regression analyses. The final section of the quantitative results component includes a comparison of the independent samples t-test, the OLR and OLS findings, and the hypothesis testing results. In the descriptive and contextual research component, responses that were provided to the open-ended questions of the survey element were analyzed by examining patterns and trends in the responses.

Findings and Results of Quantitative Data

5.1 Principal Component Analysis and Scale Reliability Testing

As mentioned previously, the majority of the survey questions were drawn from the Queensland Community Engagement Trial (Mazerolle et al., 2012), and the remaining questions were drawn from previous research on police legitimacy (Sunshine

& Tyler, 2002; Tyler & Wakslak, 2004; Tyler & Huo, 2002). The prior research already established construct validity for the items, so it was assumed that the items were reliable and valid indicators of the observed outcomes.

To simplify the analysis of the actual data, additional indices were generated by summarizing the information that originated from a number of questions reflecting the perceptions of procedural justice for the specific encounter and their general views. Previous studies also used several measurement items including respect, trustworthiness, fairness and neutrality to generate a procedural justice latent variable (Mazerolle et al., 2012; Mazerolle et al., 2013; Sunshine & Tyler, 2003; Tyler & Wakslak, 2004). Accordingly, to achieve parsimony, the variables that measured similar concepts were combined into several latent variables in this study.

Before generating the latent variables that could be used to adequately measure the perceptions of the police surrounding procedural justice issues for the specific encounter as well as their general perceptions, first, the researcher had to establish which variables needed to be grouped together. The researcher utilized the Principal Component Analysis (PCA) approach that helps to combine variables that are correlated with one another, in order to obtain a small set of uncorrelated variables (Hair et al., 2010, p.107; Tabachnick & Fidell, 2007). The PCA approach is widely applied for data reduction purposes and is used to establish variables that are correlated so they can be grouped together for the sake of parsimony (Tabachnick & Fidell, 2007, p. 610). Since the PCA strategy “summarizes patterns of correlations among observed variables,” its application provides an opportunity for enhancing our understanding of the underlying structure or

dimensionality of the original data set (Dunteman, 1989; Tabachnick & Fidell, 2007, p. 608). The PCA approach produces components, which are “simply the aggregates of correlated variables” (Tabachnick & Fidell, 2007, p. 610).

As previously stated, a researcher can use the PCA results to select a subset of variables from a larger set of variables by examining the pattern of correlations among the variables (Dunteman, 1989, p. 9; Tabachnick & Fidell, 2007), and it provides support to the researcher for verifying empirical associations. If several observed variables correlate highly with a component and do not correlate with other components, that component can be interpreted and named more easily (Tabachnick & Fidell, 2007, p. 608). Therefore, in this study, the researcher tried to reduce the number of variables and tested the construct validity of the measurement instrument by taking into account the components identified by the PCA analysis. The PCA was conducted on the items included in the survey that represented the perceptions of procedural justice both for the specific encounter and in respect to the respondents’ general views. This analysis was designed to help identify patterns in the data set and to assess whether the variables loaded on the hypothesized latent constructs or not.

Tabachnick and Fidell (2007) suggest that the steps in PCA include “selecting and measuring a set of variables, preparing the correlation matrix, extracting a set of factors from the correlation matrix, determining the number of factors, rotating the factors to increase interpretability, and, finally, interpreting the results” (p. 608). Hair and colleagues (2010) offered three main processes for interpreting a factor structure and selecting a final solution: estimating the factor matrix, factor rotation and factor

interpretation (p. 112). From this perspective, the following steps were followed while conducting the PCA. First, inter correlations between the variables were checked visually (see Appendix F). Second, the number of components was determined. Third, the varimax rotation technique was utilized to increase interpretability. Fourth, factors obtained from the PCA were labeled accordingly. Finally, results were interpreted for purposes of assessing the construct validity of the instrument.

Researchers commonly use Pearson correlations while studying the construct validity of their data through factor analysis. However, it has been argued that Pearson correlations are not the most robust method for studying categorical data and can produce misleading models (Holgado-Tello, Chacon-Moscoso, Barbero-Garcia & Vila-Abad, 2010). Mastrofski (2000) argues, “researchers seem to agree that the use of Pearson correlations on dichotomous variables and ordinal categorical variables is flawed” (p. 20). It has been argued that using polychoric correlations rather than Pearson correlations is more suitable when carrying out a factor analysis that uses a Likert scale measure (Holgado-Tello et al., 2010; Maguire & Mastrofski, 2000). Holgado et al. (2010) found that factor results obtained from a polychoric matrix showed a better fit to the theoretical model than the Pearson correlation matrix when studying the construct validity of ordinal data obtained from Likert scales (p. 165). Therefore, in this study, the researcher performed a principal component analysis by using a polychoric correlation matrix.

The present matrix of polychoric correlations was generated by employing the STATA 12.0 software. Factor loadings were obtained by using the polychoric correlation matrix as input variables. After structuring the factors, the factor loadings were examined

to detect which variables had a significant loading on a factor and to assign some meaning to the components. Since there only were two factors that had eigenvalues¹ equal or higher than 1, PCA results provided a two-factor solution.

In order to obtain a clearer pattern and to better interpret the initial PCA findings, a varimax² type of orthogonal rotation method was also used. This procedure provided a clearer picture of the relevance of each variable in the factor categories than could possibly be obtained through other approaches. Tabachnick and Fidell (2007) state, “the goal of varimax rotation is to maximize the variance of factor loadings by making high loadings higher and low ones lower for each factor” (p. 620). After the rotation, the researcher had a much clearer interpretation of the original components, and noted all 9 items included in the analysis were highly loaded on either the first or the second factor. That is, four variables were loaded most heavily on factor 1; and five variables were highly loaded on factor 2 (for a table depicting the factor loadings and a post-factor-analysis graphic, see Appendix E). These two factors thus described 70% of the variance among the items of interest. As a rule of thumb, variables that have communalities less than 0.50 should not be retained in the analysis (Hair et al., 2010, p. 122). A visual inspection of the communalities of the variables in the analysis confirmed that the variables had communalities greater than 0.50 (they ranged from 0.52 and 0.79), and were thus retained in the analysis.

Hair et al. (2010) suggest, “when an acceptable factor solution has been obtained, the researcher attempts to assign some meaning to the pattern of factor loadings” (p. 120).

¹ Kaiser criterion suggests to retain those factors with eigenvalues equal or higher than 1.

² Varimax rotation is the most popular procedure and in STATA 12.0 rotation is varimax by default.

All significant variables for a particular factor were screened. The PCA revealed that the variable loading on the first factor represented perceptions in relation to the specific SCO encounter and these were mostly defined by the following variables: satisfaction with the encountered police, trust in the encountered police, perceptions of police respect in relation to the encounter, and perceptions of the SCOs. The second factor was mostly defined by the following variables: perceptions of police fairness (general-specific), general satisfaction with the police, general trust in the police and the general views of police respect. This indicated that the first factor summarized measures of perceptions of the specific encounter, while the second summarized general perceptions about the police. Therefore, the first factor was labeled “perceptions of the police-encounter” and the second factor was labeled “perception of the police-general views.” Then, using STATA 12.0 software, two “latent”³ variables, which were designed to reflect the indices of trust, politeness, satisfaction and fairness in general, and encounter specific perceptions of police fairness, were generated⁴ and the component scores for all respondents for both factors were calculated (see Appendix G for factor score coefficients).

Due to the index calculation method used by the researcher⁵, the variables, perceptions of police fairness (general-specific), general satisfaction with police, general trust in the police and general views of police respect had a major effect on the general perceptions of the police index (the other four variables had negligible effects on this

³ A latent variable is used when a concept cannot be measured directly but can be represented or measured by one or more variables (indicators).

⁴ The variables were generated based on the most recent factor and rotate commands.

⁵ *predict* command was used after the varimax rotation in Stata 12.0 to calculate an index score for each latent variable. When it is used after *rotation* command, the *predict* command in stata calculates a weighted score for each component.

index). Since the variables, satisfaction with the encountered police, trust in the encountered police, perceptions of police respect in relation to the encounter, and perceptions of the SCOs had the highest loadings on the first factor, they had the major effect on the perceptions of procedural justice specific to the encounter index (the other five variables had negligible effects on this index). An index score was not calculated for the respondents who did not answer one or more of the index's items and they were not included in the analysis for each concept.

After conducting a factor analysis, judging the quality of an index by conducting a scale reliability testing is useful (Field, 2005; Hair et al, 2010; Knoke & Bohrnstedt, 1994). In order to test the reliability of measurement scales in this study, the Cronbach's alpha test⁶, which is the most widely used test for reliability assessment, was utilized. Generally, an alpha value of 0.7 is considered as the cut-off point and an acceptable lower limit for Cronbach's alpha (Field, 2005). Hair and colleagues (2010) suggests that a Cronbach's alpha value of .60 may be considered as acceptable in exploratory research, and the number of items and their average inter correlation also affects the reliability value (p. 125).

The scale reliability testing was applied to the following two scales: "perceptions of police in terms of procedural justice-encounter and "perceptions of police in terms of procedural justice-general." The Cronbach's alpha values were 0.70 for perceptions specific to the encounter and 0.79 for the general perceptions scales. Since a Cronbach's alpha value of .70 is considered as the acceptable lower limit in most areas of social

⁶ Cronbach's alpha is a measure of internal consistency of a set of items, and alpha coefficients range from zero -no internal consistency- to one -perfect internal consistency- (Knoke & Bohrnstedt, 1994, p. 267).

science research, the alpha coefficients for the two latent variables indicated that both scales had adequate internal consistency as a measure of reliability. Table 6 presents the alpha coefficients for the two newly generated variables and the items that had a major effect on each index.

Table 6. Cronbach's Alpha Values for Latent Variables

Index Variables	Items	Cronbach's Alpha
Perceptions of police in terms of procedural justice-general	(1) I trust Police	0.79
	(2) I am satisfied with the way police treat citizens	
	(3) Police are polite when dealing with people	
	(4) Police could/would not issue a ticket to the privileged	
Perceptions of police in terms of procedural justice-encounter	(7) I felt officer would do the same and issue a ticket to anyone in my situation	0.70
	(5) The officer was polite and treated me with respect	
	(6) I think that stationary speed controls are necessary	
	(8) The officer was trustworthy	
	(9) I was satisfied with the police behavior and how I was treated	

5.2 Descriptive Statistics of Dependent and Independent Variables

To provide baseline information, this section includes descriptive statistics such as the means, standard deviations, and range of values for the dependent (Table 7), independent and control variables (Table 8). In addition, the frequency distribution of all survey responses concerning the perceptions of the police items is provided in Table 9.

Table 7. Descriptive Statistics for the Dependent Variables

<i>Name</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Min.</i>	<i>Max.</i>	<i>Description</i>
Trust – General	500	3.94	1.53	1.00	5.00	1=Strongly Disagree;
Respect - General	493	3.75	1.41	1.00	5.00	2=Disagree;
Fairness-Neutrality - General (R)	496	2.80	1.81	1.00	5.00	3=Neutral; 4=Agree;
Satisfaction – General	497	3.83	1.40	1.00	5.00	5=Strongly Agree
Trust – Encounter	493	4.43	1.06	1.00	5.00	
Respect - Encounter	493	4.63	0.89	1.00	5.00	
Fairness-Neutrality - Encounter	493	3.22	1.80	1.00	5.00	
Satisfaction - Encounter	493	4.19	0.97	1.00	5.00	
Views of SCO - Encounter	492	4.36	1.27	1.00	5.00	
Perceptions of Procedural Justice- General	481	2.88	1.63	-.887	5.82	
Perceptions of Procedural Justice- Encounter	481	4.44	1.05	-.181	5.90	

Notes: *M*: Mean; *SD*: Standard Deviation; *Min.*: Minimum; *Max.*: Maximum; *R*: Reverse Coded.

Table 8. Descriptive Statistics for the Independent and Control Variables

Name	N	<i>M</i>	<i>SD</i>	Min.	Max.	Description
Experimental Condition	500	0.51	0.50	0	1	0= Received control condition 1= Received experimental condition
Age	488	36.44	11.54	19	75	
Gender	500	0.88	0.321	0	1	0= Female 1=Male
Education Level	494	0.429	0.496	0	1	0=High School or less; 1=College, University or Graduate level
Income Level	494	0.472	0.499	0	1	0=Monthly income 2000 TL or less 1=Monthly income more than 2000 TL
Violation Type	500	0.234	0.424	0	1	0= Exceeding the speed limit up to 30% 1= Exceeding the speed limit 30% or over the designated speed limit
Prior contact with the police	488	0.455	0.499	0	1	0= Did not contact with the police in the last 12 months; 1=Contacted with the police in the last 12 months
Demerit points accumulated	499	6.353	14.36	0	90	Demerit points accumulated within the last 12-months
Having a police relative or close friend	489	0.378	0.486	0	1	0=Do not have any police relative or close friend; 1= Have a police relative or close friend

Notes: *M*: Mean; *SD*: Standard Deviation; Min.: Minimum; Max.: Maximum.

Table 9. Frequency Distribution of Responses to Perceptions of Police Items

ITEM	Strongly Disagree	Somewhat Disagree	Neither agree or disagree	Somewhat Agree	Strongly Agree	Rating Average Score (M & SD)
<i>General Statement</i>						
Overall, I trust police	291 (58%)	83 (16.5%)	21 (4.2%)	20 (4%)	87 (17.3%)	3.94 1.53
I am satisfied with the way police treat citizens	72 (14.5%)	21 (4.2%)	43 (8.6%)	145 (29.1%)	217 (43.6%)	3.83 1.4
Overall, police are polite when dealing with people	70 (14.2%)	33 (6.7%)	49 (9.9%)	140 (28.3%)	202 (40.9%)	3.75 1.41
Police could not or would not issue a traffic ticket to the privileged people	218 (43.9%)	36 (7.2%)	45 (9%)	21 (4.2%)	177 (35.6%)	2.80 1.81
<i>During the specific SCO</i>						
The police officer was polite and treated me with respect	17 (3.4%)	8 (1.6%)	11 (2.2%)	67 (13.5%)	392 (79.2%)	4.83 0.89
Despite the outcome (speeding ticket), I think that stationary speed controls are necessary	47 (9.5%)	8 (1.6%)	30 (6.1%)	41 (8.3%)	367 (74.4%)	4.36 1.26
I felt the police officer would do the same and issue a ticket to anyone in my situation irrespective of his/her status	171 (34.6%)	22 (4.5 %)	46 (9.3 %)	37 (7.5%)	218 (44.1 %)	3.22 1.80
I felt that the police officer was trustworthy	30 (6.1%)	6 (1.2 %)	20 (4.1%)	102 (20.7%)	335 (68%)	3.43 1.06
I was satisfied with police behavior and how I was treated during this encounter	21 (4.3%)	17 (3.4%)	17 (3.4%)	228 (46.2 %)	211 (42.7 %)	4.20 0.97

Analysis of Quantitative Data

5.3 Independent Samples T-test

Citizen Perceptions of Police in General

Since different drivers were randomly assigned to two different conditions, an independent samples t-test was deemed appropriate to measure the effect of the experimental manipulation on the outcome of interest in this study. An independent samples t-test is conventionally used to analyze results obtained from an experimental study when different participants are assigned to two different experimental conditions (Field, 2005, p. 286). One of the most important assumptions of the t-test is the normality of the dependent variable. According to Williams (2009), some deviation from the assumptions of the t-test could be handled, but too much deviation might lead a researcher to generate invalid estimates (p. 117).

Although the level of measurement for the present dependent variables was ordinal (a Likert scale ranging from “strongly agree” to “strongly disagree”) and conducting a t-test with typical data is usually considered as inappropriate, an independent samples t-test was conducted as the initial analysis method because of its ease in the interpretation process. In order to avoid generating misleading conclusions, the researcher did not solely rely on the t-test results, and also conducted an ordinal-level test (ordered logistic regression) to confirm the t-test findings.

The independent variable of the study involved an experimental manipulation (receiving procedurally just policing) and the dependent variables involved the citizens’ perceptions of the police in terms of satisfaction, respect, neutrality and trust. Each

dependent variable was measured by a single item asking the level of respondents' agreement with each statement. The highest possible score for each statement ranged from 5=strongly agree to 1=strongly disagree. By employing an independent samples t-test (one-tailed) for each dependent variable, the sample means of the two groups were calculated and the differences between the sample means was compared to assess whether the means differed by chance or they differed because of the experimental manipulation. Since the only difference between the two groups by design was the experimental manipulation, the researcher believed that any significant differences in the means of the outcomes could be attributed to the experimental intervention. All t-test results in this section were evaluated at the $\alpha = 0.05$, and significant results were reported after that.

Citizen Perceptions of the Police in General

The first section of the survey included several questions that measured drivers' general perceptions of the police (see Appendix A). Each of the survey items in this section were linked to the measured perceptions, which were trust, fairness, respect, and satisfaction. Several t-tests were performed to determine if there were statistically significant mean differences between the experimental and control drivers' perception scores concerning their general views of police. The following independent samples t-test analyses were conducted.

First, an independent samples t-test was conducted to test whether there was a statistically significant difference between the mean scores of the experimental and control drivers' responses in terms of their general trust in police. The results revealed

that there was no statistically significant difference as regards the mean value of general trust in police between the experimental and control group drivers, $t(498) = 1.12$, $p = 0.13$ (two-tailed). A closer look at the group means indicated that mean levels of general trust in the police were slightly lower for the drivers in the control group ($M = 3.86$, $SD = 1.58$) than the drivers in the experimental group ($M = 4.01$; $SD = 1.58$). Since the difference was not statistically significant, it can be concluded that drivers in both groups reported similar levels of trust in police. Cohen's d effect size value ($d = 0.10$) also suggested low practical significance⁷.

Second, an independent samples t -test was conducted to test whether there was a statistically significant mean difference between experimental and control drivers' perception scores in terms of their general views of police respect. The t -test results indicated that there was no statistically significant difference between the control and experimental groups in terms of general perceptions of police respect, $t(491) = 1.49$, $p = 0.068$. Further, Cohen's d effect size value ($d = 0.13$) also indicated low practical significance.

Third, the survey also included a question that measured the general satisfaction of respondents with the police. Higher scores on this question represented higher levels of general satisfaction with respect to how police treat citizens. The t -test results revealed that the mean for general satisfaction with police in terms of the treatment was significantly different between the experimental and control groups, $t(495) = 1.76$, $p < 0.05$. The t -test analysis supported the prediction that the drivers in the experimental

⁷ Effect sizes provide an objective measure of the importance of an effect. Cohen's d is a widely accepted measure of effect size. The standard interpretation offered by Cohen is: An effect size of 0.01 to 0.19 is a small effect, 0.20 to 0.49 is a medium effect, and over 0.50 is a large effect (Field, 2005, p.32).

condition ($M=3.94$, $SD=1.37$) would express higher levels of satisfaction with how the police treat citizens than the drivers in the control condition ($M=3.71$, $SD=1.43$). However, Cohen's d effect size value ($d=0.16$) showed low practical significance.

Fourth, in order to ascertain whether a statistically significant difference existed between the experimental and control drivers' perceptions of police neutrality-fairness scores, an independent samples t -test was utilized. The general perceptions of police neutrality-fairness variable was assessed using a single question that asked respondents to what extent they agreed that the police could not or would not issue a traffic ticket to privileged individuals. As can be understood from the statement, the item was worded negatively, so it reflected unfairness. In order to obtain an item that measured perceptions of fairness, the item was reverse scored. Thus, with reverse scoring, higher scores indicated more favorable perceptions of police fairness-neutrality. The t -test results indicated that there was no statistically significant difference on the mean for general perceptions of police fairness between the experimental and control groups, $t(494)=1.36$, $p=0.087$. In addition, Cohen's d effect size value ($d=0.12$) suggested low practical significance.

Finally, in order to examine whether there was a statistically significant mean difference between the experimental and control groups on general perceptions of procedural justness of the police⁸, an independent samples t -test was conducted. The t -test statistics indicated that the mean differences between the two groups was not statistically significant, $t(479)=1.596$, $p=0.055$. In addition to non-significant t -test

⁸ As mentioned before, the index variable for the procedural justness of the police in general was generated based on the PCA, which indicated that the variable loading on the second factor (labeled as procedural fairness of the police-general) represented general perceptions of police.

results, the Cohen's d effect size value ($d=0.15$) indicated low practical significance.

Table 10 presents the descriptive statistics for the perceptions of police in general.

Table 10. Citizen Perceptions of the Police in General ($N=500$)

	Experimental			Control			Cohen's d	p
	Valid	Mean (SD)	SE	Valid n	Mean (SD)	SE		
Trust	254	4.01(1.58)	0.929	246	3.86(1.58)	0.101	0.1006	0.130
Respect	254	3.84(1.41)	0.089	239	3.65(1.41)	0.091	0.1345	0.068
Fairness-Neutrality	254	2.69(1.80)	0.113	242	2.91(1.81)	0.116	0.1221	0.087
Satisfaction	254	3.94(1.37)	0.086	243	3.71(1.43)	0.091	0.1578	0.039
Perceptions of Procedural Justice	249	2.76(1.60)	0.101	232	3.00(1.64)	0.108	0.1457	0.055

* A Cohen's d of 0.01 to 0.19 is a small effect, 0.20 to 0.49 is a medium effect, and over 0.50 is a large effect.

Citizen Perceptions of the Police for the Specific SCO encounter

Each survey item in the second section of the survey was employed to measure the citizens' perceptions of police in relation to the SCO encounter. The following concepts were included in this section of the survey: perceptions of police respect, perceptions of fairness-neutrality, trust in police, satisfaction with police and perceptions of the SCOs. Independent samples t -tests were then conducted for each concept to ascertain whether statistically significant differences existed between the mean of the experimental group and the mean of the control group for each measured concept.

First, an independent sample t -test was conducted to determine whether there was a statistically significant difference between the mean of the control and experimental

group on drivers' perceptions of trust in the encountered police officer. The results indicated a statistically significant difference between the experimental and control groups for mean trust in the encountered officer, $t(491)=6.40$, $p<0.001$. The results suggested that the drivers in the experimental condition ($M=4.72$, $SD=0.78$) reported significantly higher trust in the encountered officer than the drivers in the control condition ($M= 4.13$, $SD=1.23$). Further, Cohen's effect size value of ($d=0.58$) suggested moderate to high practical significance.

Second, by employing an independent samples t-test, the statistically significant differences between the experimental and control means for the perceptions of police respect in relation to the SCO encounter were assessed. The significant t-test results indicated that there was a statistically significant difference between the control and experiment groups, $t(491)=4.93$, $p<0.001$. The drivers in the experimental condition ($M=4.82$, $SD=0.79$) held more favorable perceptions of police respect in relation to the encounter than drivers in the control condition ($M=4.41$, $SD=1.05$). Furthermore, the Cohen's effect size value ($d=0.44$) suggested low to moderate practical significance.

Third, in order to ascertain whether there was a statistically significant difference between the mean of the control and experimental group for the SCO specific satisfaction item, an independent samples t-test revealed a significant difference between the experimental and control conditions, $t(493)= 9.31$, $p<0.001$. Drivers in the experimental condition reported higher scores for encounter satisfaction concerning their treatment ($M=4.56$, $SD=0.68$) than drivers in the control condition ($M=3.81$, $SD=1.08$). Further, the Cohen's effect size value ($d=0.84$) suggested high practical significance.

Fourth, an independent samples t-test utilized to determine whether the mean for a statistically significant difference existed between the experimental and control means for the perception of police fairness-neutrality in relation to the specific SCO revealed no statistically significant difference for mean fairness-neutrality in relation to the specific encounter between the experimental and control groups, $t(491)=0.13$, $p=0.45$. The Cohen's d effect size value ($d=0.01$) also suggested that there was almost no effect.

Fifth, in order to determine whether there was a statistically significant mean difference between the experimental and control drivers' views of speed controls scores, an independent samples t-test indicated a significant difference between the two groups, $t(490)=3.26$, $p<0.001$. Drivers in the experimental condition ($M=4.54$, $SD=1.17$) reported higher agreement with the necessity of speed control operations than drivers in the control condition ($M=4.16$, $SD=1.41$). Further, Cohen's effect size value ($d=0.29$) suggested low to moderate practical significance.

Finally, an independent samples t-test conducted to ascertain whether the mean perceptions of procedural justice specific to the encounter⁹ were significantly different for the experimental and control groups revealed a significant difference between the experimental ($M= 4.79$, $SD=0.82$) and control groups ($M= 4.06$, $SD=1.13$) [$t(479)=8.14$, $p<0.001$], which suggested that the drivers who received the procedurally just policing had a higher mean for perceptions of procedural fairness compared to those who received the routine procedure. In addition, the Cohen's effect size value ($d=0.74$) suggested moderate to high practical significance. Table 11 presents the descriptive statistics for the

⁹ The index variable "perceptions of procedural justice specific to the encounter" was mainly comprised of four variables related to the encounter specific perceptions.

perceptions of the police for the encounter variable.

Table 11. Citizen Perceptions of the Police for the Specific SCO Encounter ($N=500$)

	Experimental			Control			Cohen's d	p
	Valid n	Mean (SD)	SE	Valid n	Mean (SD)	SE		
Trust	253	4.72(0.78)	0.049	240	4.13(1.23)	0.07	0.5768	<0.001
Respect	254	4.82(0.79)	0.049	239	4.41(1.05)	0.06	0.4448	<0.001
Satisfaction	253	4.56(0.68)	0.043	240	3.81(1.08)	0.06	0.8389	<0.001
Fairness-Neutrality	251	3.23(1.81)	0.114	242	3.20(1.78)	0.11	0.0114	0.45
Views of SCO	251	4.54(1.17)	0.73	241	4.16(1.41)	0.09	0.2938	<0.001
Perceptions of Procedural	249	4.79(0.82)	0.052	232	4.06(1.13)	0.07	0.7430	<0.001

* A Cohen's d of 0.20 to 0.49 is a small effect, 0.50 to 0.79 is a medium effect, and over 0.80 is a large effect.

The independent samples t-test results with regards to drivers' perceptions of the police in terms of the specific encounter experienced and their general views of the police are represented in this section. In this regard, the related t-tests yielded significant mean differences between the two groups for the encounter perception items except for the encounter fairness item; however, the mean differences between the two groups for the general perception items were non significant except for the general satisfaction item. At this point, the researcher believed that it would be useful to run multivariate analyses because that might provide an opportunity to test whether the results of t-tests could be considered robust.

5.4 Multivariate Analyses

5.4.1 Ordinary Least Squares (OLS) Regression Analysis

Preliminary Analyses

Before conducting a multiple regression analysis, data should be examined to determine whether the assumptions of the regression method employed by the researcher are met. Failure to meet such assumptions can lead to biased regression coefficients and parameters (Field, 2005, p. 171). Thus, in order to avoid misleading results, preliminary analyses were conducted. Two steps were followed to determine how well the data met the assumptions for OLS regression.

First, the descriptive statistics and distributions of the dependent variables (including the general perceptions of police, and the perceptions of police in respect to encounter) were examined. The researcher checked the normality assumption by employing diagnostic tests (Skewness and Kurtosis) along with histograms. Second, the correlations between the variables were checked and the VIF (Variable Inflation Factor) test was conducted to detect any possible multicollinearity issue.

The first step in any preliminary data analyses is to inspect various descriptive statistics of the variables and to inspect whether they are normally distributed¹⁰. Hamilton (2006) noted, “many statistical procedures work best when applied to variables that follow normal distributions” (p. 126). In order to examine whether the ordinal variables that were used in the t-test analysis (trust, satisfaction, neutrality and respect) were normally distributed, histograms for these variables were created and visually inspected.

¹⁰ Field (2005) noted that predictors do not necessarily be normally distributed (p.170). It is also suggested if there was such a requirement; “we would not be able to use dummy coded variables in our models” (“Regression with Stata,” 2013).

These histograms indicated the presence of a non-normal distribution (see Appendix H). Since the number of response categories for these ordinal dependent variables were very small and they had non-normal distributions, treating these ordinal variables as if they were continuous was inappropriate¹¹. Thus, these variables were not included in the ordinary least squares analysis. Nevertheless, diagnostic tests were only run for the two latent variables (which were the general perceptions of police in general, and in respect to the specific encounter they experienced) to determine whether the dependent variables were normally distributed or not. Therefore, in order to establish whether the two latent variables were normally distributed, histograms were drawn, and a Skewness-Kurtosis test was conducted.

Although the histogram for “the general perceptions of police” variable indicated a somewhat skewed distribution rather than a severely skewed distribution (see Appendix D), a Skewness and Kurtosis test indicated that distribution was significantly non-normal¹² as regards skewness ($p < .001$), and kurtosis ($p < .001$), and in both statistical descriptors jointly ($p < .001$). The skewness for the variable was -0.35 , which means that the distribution had a negative skew¹³; and the kurtosis for the variable was 2.18 , which means that the tails were thick¹⁴.

¹¹ Berry (1993) argued that for the use of ordinal data in regression, it is inappropriate to treat an ordinal dependent variable as continuous when the number of response categories is five or fewer (p.47).

¹² The null hypothesis for skewness and kurtosis is that the variable is normally distributed, so if the test results are significant this indicates a non-normal distribution (Hamilton, 2006, p.126).

¹³ A normal distribution has skewness=0, in a Stata analysis. If the skewness is greater than this the distribution is positively skewed, if it is less than this the distribution is negatively skewed (Acock, 2012, p.229).

¹⁴ A normal distribution has a kurtosis of 3.00. A value less than 3.00 means that the tails are too thick (too flat in the middle), and a value greater than 3.00 means that the tails are too thin (Acock, 2012, p.229).

The histogram and test results also indicated a negatively skewed distribution for “the perceptions of the police in respect to the SCO encounter.” The variable appeared to be significantly non-normal in skewness ($p < .001$), and kurtosis ($p < .001$), and in both statistics when considered jointly ($p < .001$). The skewness for the variable was -1.50 , which means that the distribution had a negative skew; and the kurtosis for the variable was 6.32 , which means that the tails were thin. The descriptive statistics of the two latent variables (the general perceptions of police in general and in respect to the specific encounter experienced) and the skewness-kurtosis test results are presented in Table 12.

Table 12. Descriptive Statistics of the Dependent Variables

Variable	N	Minimum	Maximum	Mean	SD	Skewness (statistic)	Kurtosis (statistic)
Perceptions of police in terms of procedural justice -General	481	-0.887	5.822	2.88	1.63	-0.347	2.184
Perceptions of police in terms of procedural justice -Encounter	481	-0.181	5.90	4.44	1.05	-1.506	6.322

Even though the two dependent variables were treated as metrics with negatively skewed distributions, the central limit theorem suggests “the sampling distribution should be normal when sample is large” (Field, 2009, p. 345). Weisburd and Britt (2007) argued, “in the field of criminal justice, it is generally assumed that the central limit theorem can be applied where the sample size is 30 or greater” (Weisburd & Britt, 2007, p. 249). Hair and colleagues (2010) suggested “as the sample sizes become large, the researcher can be less concerned about non-normal variables, except as they might lead to other assumption violations that do have an impact in other ways” (p. 72). Since, the sample size for this study was 500 and multivariate analysis was only utilized to test whether significance for

the outcome variables in the t-tests still held in an OLS regression, it was believed OLS could still be employed despite the non-normal distribution of the dependent variables.

In order to determine the statistically significant correlations between the variables in this study, the data was analyzed by Pearson's r correlations. Pearson's r (which is also known as the Pearson Product-Momentum Correlation coefficient) reports the extent of the linear relationship between two interval-level variables (Williams, 2009, p.147). It standardizes the covariance and provides a value that ranges from -1.00 to +1.00. When the value is 0, this indicates no linear relationship between the variables, and when the value is either -1 or +1 this indicates that the two variables are perfectly correlated (Field, 2005, p. 111). Since the Pearson's correlation test indicates how strong the linear correlation is between the tested variables¹⁵, these data also helped the researcher to identify any possible multicollinearity problem. Therefore, a matrix of the correlations between all the study variables was generated by employing Pearson's r statistics¹⁶ as presented in Table 13.

¹⁵ Pearson's r is a parametric statistics and can be applied to interval-level variables. It is also used to examine categorical data with two possible values. Although applying Pearson correlations to ordinal variables (i.e. scores obtained from 5-point likert type rating scales) is not "technically" appropriate, researchers sometimes treat an ordinal variable as metric and consider that they had a normal distribution (Andersen, 2004; Berry, 1993). In accordance with this argument, the dependent variables in this study were treated as interval and included in the correlation matrix in this study. All independent variables except *having a police relative or close friend* were either metric or binary. Thus, *having a police relative or close friend* was transformed into a dummy variable.

¹⁶ Correlations were found based on the observations available for each variable pair. In STATA 12.0, the command *pwcorr* (pairwise correlation) accomplishes this.

In addition to the Pearson's r , the Variable Inflation Factor (VIF), which is a test for detecting multicollinearity, was employed. Large VIF values indicate high collinearity or multicollinearity among the predictors (Hair et al, 2010, p. 161). There is no specific threshold that indicates what VIF value is excessive. However, if the mean VIF is larger than 1 or the largest VIF is greater than 10, the presence of multicollinearity should be considered by the researcher (see Appendix J for VIF statistics). VIF statistics also provide a tolerance value and a tolerance level below 0.2 this limit is considered as an indication of multicollinearity (Field, 2009; Hamilton, 2006). In the VIF test, the tolerance values ranged from 0.70 to 0.97, the largest VIF was close to 1.33 (which is way below the 10 limit), and the VIF mean was almost 1.11 (slightly above 1). Since none of the tolerance values were below the minimum level and the VIF mean met the criteria, there was no observable multicollinearity problem within the current data. In other words, none of the predictors had any virtual impact on the variances of the other variables.

Regressing the dependent variables on the experimental condition (which was dummy coded) is equivalent to performing an independent samples t-test of whether group means is the same across the experimental and control conditions. In other words, a bivariate linear regression analysis and an independent samples t-test analysis would yield exactly the same results when same variables were used. Since the t-test analysis of each independent variable were conducted in the previous section, a separate bivariate linear regression analysis was unnecessary. Therefore, in the next section, rather than conducting bivariate correlations, the two dependent variables were regressed on the experimental condition when controlling for age, demerit points accumulated, prior

contact with the police, violation type, income level, education level and having a police relative or close friend.

Ordinary Least Squares Regression Findings

In a randomized controlled trial, it is assumed that the two groups were formed by random assignment, so the two groups are statistically equivalent. Since randomization “makes it possible to assume that all other things are equal,” one does not need to control for other variables that might have an impact on causal relationship in an experimental study (Maxfield & Babbie, 2009, p. 117). Despite the random assignment carried out in this present study, the two groups might not have been perfectly similar to each other because of some internal validity threats, such as a differential attrition problem. In this study, some drivers who were assigned to the control or experimental condition did not participate in the survey and some also refused to receive the treatment condition. Because of the differential attrition¹⁷ rate between the treatment and control groups, it cannot be fully ensured that experimental and control drivers who participated in the survey were perfectly similar to each other. “One of the great advantages of multivariate analysis is that they allow for the inclusion of control variables” (Sweet & Grace-Martin, 2008, p. 148). Thus, multiple regression analysis was employed as the statistical technique to check whether the significance for the outcome variables in the t-tests held when the controls were included. Specifically, the Ordinary Least Squares (OLS) regression method was used in the present study to examine the relationship between the experimental condition and the outcome variables.

¹⁷ “Attrition refers to the fact that participants in an experiment sometimes fail to complete the outcome measures. If different kinds of people remain to be measured in one condition versus another, then such differences could produce posttest outcome differences even in the absence of treatment” (Shadish et al., 2002, p.59).

Two different OLS regressions were developed to analyze the data. The first regression (hereafter the “general perceptions regression”) was employed to evaluate the impact of the experimental condition on the general perceptions of procedural justness of the police; and the second regression (hereafter termed the “encounter perceptions regression”) was utilized to assess the impact of the experimental condition on the perceptions of procedural justness of police for the specific encounter.

Since the OLS regression analysis is based on the use of the mean and variance, the variables in the model should be interval/ratio or nominal/ordinal with only two values of the independent variables in an OLS regression (Walker & Maddan, 2009, p. 271). The independent variable in this study (experimental condition) was a dichotomous variable (experimental condition was coded as 1 and the control condition is coded as 0) and the control variables were also either interval or dichotomous, so they can be used in an OLS model. The two dependent variables were latent variables, which were generated after factor analysis.

As previously stated, OLS multiple regression analysis was used to determine the experimental condition’s impact on the perceptions of the police in terms of procedural justice both for the specific SCO encounter and for their more general views. First, the general perceptions of the procedural justness of police were regressed on the experimental condition by controlling for age, demerit points accumulated, prior contact with the police, violation type, income level, education level and having a police relative or close friend. Table 14 displays the results of the OLS analysis for the general perceptions.

Table 14. OLS Regression Results: Perceptions of Police in terms of Procedural Justice – General

	<i>B</i>	Standard error	Beta
Experimental Condition	- 0.201	0.155	- 0.061
Age	0.015*	0.007	0.107
Gender	- 0.115	0.258	- 0.022
Education Level	- 0.104	0.177	- 0.031
Income Level	- 0.017	0.172	- 0.005
Violation Type	- 0.017	0.180	- 0.004
Prior contact with the police within the last 12-months	- 0.351*	0.162	- 0.107
Demerit points accumulated within the last 12-months	- 0.005	0.005	- 0.040
Having a police relative or close friend	0.202	0.159	0.060
Constant	2.463***	0.438	
N	458		
R^2	0.041		
F	2.11		

Notes: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

The global significance of the model was determined by an F-test and its corresponding p-value¹⁸. Since the F statistic was significant (F= 2.11; df=9, 448; $p < 0.05$), the null hypothesis for the global fit of the model was rejected. In other words, overall, the model predicted the general perceptions of the procedural justness of police significantly well. The R^2 for the model was 0.041, which indicates that the model account for only 4.1% of the variation in the context of the general perceptions of the procedural justness of police by respondents. The R-squared value was low, so this means the goodness of fit of the model was poor in predicting general perceptions.

¹⁸ The null hypothesis for F test is none of our coefficients are significantly different from 0. The alternative hypothesis is at least one of the coefficients does not equal to 0.

The analysis also indicated that there was no statistically significant relationship between the experimental condition and the general perceptions of procedural justness of police ($p=0.197$). This finding is consistent with the t-test results. The comparison of the test results is discussed later.

In terms of control variables, the OLS analysis revealed there was a statistically significant positive relationship ($p<.05$) between the respondent's age and their general perceptions of the procedural justness of police; and there was a statistically significant negative relationship ($p<.05$) between prior contact with the police within the last 12-months and the general perceptions of procedural justness of police, controlling for other independent variables in the model. Since these two variables were included in the model as controls, their impact on the general perceptions construct was not interpreted in detail.

Second, the perceptions of the procedural justness of the police for the specific encounter were regressed on the experimental condition by controlling for age, demerit points accumulated, prior contact with the police, violation type, income level, education level and having a police relative or close friend. Table 15 displays the results of the OLS analysis for the encounter specific perceptions.

Table 15. OLS Regression Results: Perceptions of Police in Terms of the Procedural Justice – Encounter

	<i>B</i>	Standard error	Beta
Experimental Condition	0.665***	0.094	0.313
Age	- 0.002	0.004	- 0.017
Gender	- 0.291	0.156	- 0.085
Education Level	0.233*	0.107	0.109
Income Level	- 0.133	0.104	- 0.063
Violation Type	- 0.236*	0.109	- 0.095
Prior contact with the police within the last 12-months	0.097	0.098	0.046
Demerit points accumulated within the last 12-months	- 0.002	0.003	- 0.026
Having a police relative or close friend	0.151	0.096	0.069
Constant	3.757***	0.265	
N	458		
R^2	0.158		
F	9.32		

Notes: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

The F statistics here were significant ($F = 9.32$; $df = 9, 448$; $p < 0.001$); hence the null hypothesis for the global fit of the model was rejected. In short, overall, the model predicted the general perceptions of the procedural justness of the police significantly well. The R^2 for the model was 0.158, which indicates that the model account for 15.8% of the variation in the perceptions of the procedural justness of the police specific to the SCO encounter.

The OLS analysis revealed that there was a statistically significant positive relationship between the experimental condition and the drivers' perceptions of the procedurally justness of police for the specific encounter ($p < 0.001$). Specifically, the respondents who received the experimental condition reported an average of 0.665 higher scores for the perceptions of procedural justice specific to the SCO encounter than

respondents who received the control condition, holding constant the other independent variables in the model.

In terms of control variables, the results showed there was also a statistically significant positive relationship ($p < .05$) between education level and the perceptions of the procedural justness of the police specific to the encounter; and there was a statistically significant negative relationship ($p < .05$) between the violation type and the perceptions of procedural justness of the police specific to the encounter, when controlling for other independent variables in the model.

The standardized regression coefficient for the experimental condition ($\beta^* = 0.313$) was much higher than the standardized coefficient for the education level ($\beta^* = 0.109$) and violation type ($\beta^* = -0.095$). Thus, the experimental condition was a more prevalent predictor of encounter specific perceptions of procedural justness of the police than the education level or violation type.

Regression Diagnostics

One of the assumptions of the OLS is that “the residuals in the model are random and normally distributed variables” (Field, 2005, p. 170). If this assumption is violated, the coefficients will still remain unbiased, but the intercept will be biased. The t-tests and p values for the regression analysis will also be affected in that case (Walker & Maddan, 2009, p. 273). In order to detect whether the residuals were normally distributed, regression diagnostics were conducted for both models. The following procedures were followed to check for potential problems and to assess the plausibility of the key assumptions.

First, a histogram was drawn to visually assess the possible non-normality of the residuals. Second, a normal probability-plot was generated to examine whether the points line up along the diagonal (see Appendix K). Even though the standardized normal probability plot for general perceptions showed minor deviations from normality, overall both plots (encounter and general perceptions) showed indications of non-normality. Specifically, the probability plot for encounter perceptions showed a deviation from normal at the lower tail. Third, kernel density plots of residuals were generated. The kernel density plot also indicated non-normality of the residuals for both models. Fourth, a numerical test, the inter-quartile range (IQR) was employed to detect outliers¹⁹. The IQR statistic assumes the symmetry of the distribution (Stata Web Books: Regression Diagnostics, 2013). For the residuals of the general perceptions regression, the IQR statistics demonstrated that there were no severe or mild outliers and the residuals had an approximately normal distribution. For the residuals of the encounter perceptions, there were severe and mild outliers (see Appendix K).

Finally, a Shapiro-Wilk test for normality was performed for the residuals. In this test, the p-value is based on the assumption that the residuals are normally distributed. The Shapiro-Wilk test results for the general perceptions model ($p < 0.001$), and the encounter perceptions model ($p < 0.001$) were significant, so the null hypothesis of the normality of residuals was rejected, meaning that the residuals were not normally distributed. On the other hand, if the Shapiro-Wilk W statistic is close to one, this indicates normality. The Shapiro-Wilk W statistic for the general perceptions regression

¹⁹ “Severe outliers consist of those points that are either 3 inter-quartile-ranges below the first quartile or 3 inter-quartile-ranges above the third quartile. The presence of any severe outliers should be sufficient evidence to reject normality at a 5% significance level. Mild outliers are common in samples of any size” (“Regression with Stata,” 2013).

was 0.966 and the Shapiro-Wilk W statistic for the encounter perceptions regression was 0.912. It should also be noted that the sample size affects the significance of the Shapiro-Wilk test, and any unimportant deviations from normality might end up significant test results when the sample size is large (Cox, 2013; Park, 2006).

A visual assessment of normality is recommended when different tests yield different results for normality (Lazzaro, 2013). Nevertheless, a visual inspection of normality indicated that there were mixed test results for the normality of residuals for the general perceptions regression, so it can be accepted that the residuals were approximately normally distributed for the general perceptions construct. However, there seems to be a deviation from normality for the residuals of the encounter perceptions regression.

Another assumption of the OLS analysis is homoscedasticity²⁰, which means, “the residuals at each level of the predictors should have the same variance (homoscedasticity)” (Field, 2005, p. 170). A commonly used graphical method to detect heteroscedasticity is the examination of residuals through scatter plots (Hamilton, 2006; Hair et al., 2010, p.221; Stata Web Books: Regression Diagnostics, 2013). Therefore, residual-versus-predicted value plots were generated after each regression and the generated plots were examined to evaluate whether the homoscedasticity assumption was met (see Appendix J).

The visual examination of the residuals plot demonstrated that the variance of the residuals across values of the dependent variable seemed to be non-constant for the

²⁰ When the variance of our residual error term is non-constant there is said to be heteroscedasticity.

encounter perceptions regression (see Appendix L). The residuals below the zero line appear slightly more spread out than those above the zero line. Therefore, it can be concluded that heteroskedasticity was present because residuals did not symmetrically distributed around zero line.

In order to check for homoscedasticity in the general perceptions regression, the residual plot of the regression was also examined²¹. The residuals plot showed that residuals were symmetrically distributed around 0 and the data appeared to be fairly homoscedastic (see Appendix L). However, relying solely on the visual inspection of residual plot might be misleading.

The examination of residuals through residual-versus-predicted value plots is one of the methods for detecting heteroscedasticity, there are also other methods. The Breusch-Pagan test for normality was also performed for purposes of achieving a more detailed examination of the homogeneity of variance. The Breusch-Pagan test results from the general perceptions regression were not statistically significant²² ($p=.1866$), which indicated that the variance of the residuals was homogenous (heteroscedasticity was not present). The statistically significant Breusch-Pagan test results ($p<.001$) from the encounter perceptions regression analysis suggested that the null hypothesis of constant variance should be rejected, which suggested heteroscedasticity.

²¹ Data are homoscedastic if the residuals plot is the same width for all values of the predicted DV.

²² The null hypothesis of the Breusch-Pagan test is that the variance of the residuals is homogenous.

It should also be noted that the Breusch-Pagan test is sensitive to the regression assumptions (such as the assumption of normality). Therefore, rather than judging the severity of the observed heteroscedasticity solely by relying on the test results, researchers often combine the test results with diagnostic plots to make an assessment on the severity of the heteroscedasticity (Stata Web Books: Regression Diagnostics, 2013). For the two OLS regression models in this study, the plot for the general perceptions regression did not show strong evidence for heteroscedasticity; however, the encounter perceptions regression seemed to have heteroscedasticity. As previously stated, the two regression models were run to assess whether the observed significance for the outcome variables noted for the t-tests would still hold in an OLS regression procedure. Since the OLS models were run as a secondary test for confirmatory purposes, the present researcher did not employ any statistical methods to correct heteroscedasticity in the encounter perceptions regression.

5.4.2 Ordered Logistic Regression Analysis

The present researcher initially conducted t-tests to determine whether the experimental intervention had a statistically significant effect on the outcome measures. The primary reason for employing t-tests in this study was due to its ease of interpretation. Although researchers commonly analyze ordinal dependent variables by treating them as if they were interval, ordered logistic regression (OLR) is the most appropriate method for analyzing ordinal outcomes with five or more categories (Andersen, 2004; Berry, 1993; Demaris, 1992; Long, 1997). Therefore, the OLR model was used to verify whether the significant t-test results for the ordered outcomes would

still prevail when a more appropriate statistical model (ordered logistic regression) was employed.

The OLR model was not only preferred because of its technical appropriateness to the data, but it was also preferred because it allowed the researcher to take the demographics of the drivers into account. As mentioned, despite the successful randomization process, the experimental and control drivers who participated in the survey might not have been perfectly similar to each other with regards to basic demographics, because of the differential attrition issue. Therefore, the model allowed the researcher to employ the control variables such as demographic identifiers and prior contacts with the police.

Testing the Parallel Regression Assumption

After running the OLR models, a Brant test²³ was conducted in Stata 12.0 statistical analysis program to determine whether any of the models violated the parallel regression assumption²⁴. First, the Brant test was conducted after estimating the general trust model (model 1), general respect (model 2), general satisfaction with police treatment model (model 3) and general fairness-neutrality model (model 4). The test

²³ “A Wald test proposed by Brant (1990) allows both an overall test that all the slope coefficients are equal and tests of the equality of coefficients for individual variables” (Long, 1997, p.143).

²⁴ One of the assumptions underlying ordered logistic regression is the parallel regression assumption. The assumption is that “Each probability curve differs only in being shifted to the left or right. That is, they are parallel as a consequence of the assumption that the slope coefficients (β 's) are equal for each equation... To the degree that the parallel regression assumption holds, the coefficients $\hat{\beta}_1, \hat{\beta}_2, \dots, \hat{\beta}_{J-1}$ should be *close*” (Long & Freese, 2001, p. 151). In Stata 12.0, parallel regression assumption can be tested by using “brant” command after the ordered logistic regression. The “brant” command does not only provide a global test of whether any variable violates the parallel regression assumption, but it can also test the assumption for each variable separately (Williams, 2006, p.61).

results revealed that the general trust model ($\chi^2 = 32.56, p = 0.212$), general respect model ($\chi^2 = 30.15, p = 0.307$) and general satisfaction with police treatment model ($\chi^2 = 21.42, p = 0.766$) did not violate the parallel regression assumption²⁵. However, the Brant test indicated that the general fairness-neutrality model ($\chi^2 = 53.06, p < 0.01$) violated the parallel lines assumption. In addition to a global test of the model for the parallel-lines assumption, the statistical analysis program also provided the test results for each variable separately. A closer look into the Brant test results for the general fairness-neutrality model revealed that the coefficients for the “experimental condition” did not differ greatly across regressions and the variable did not violate the parallel regression assumption ($\chi^2 = 0.83, p = 0.841$). Since the “experimental condition” variable did not violate the assumption, the researcher decided to proceed with the ordered logistic regression model for examining “fairness-neutrality.”

Second, a test of the parallel regression assumption was employed after the encounter trust (model 5), encounter respect (model 6), encounter satisfaction (model 7), encounter fairness-neutrality (model 8), and views of the SCO (model 9) models were performed. However, the statistical software yielded an error reading and did not provide test results for the three models that were employed to estimate the outcome variables of “encounter respect”, “encounter trust” and “encounter satisfaction. After visually inspecting the number of cases in some categories, the researcher noticed that some outcome variable categories had very small frequency counts. Long (1997) suggested, “If the number of cases in a response category is small, the model may fail to converge.

²⁵ A significant test statistic provides evidence that the parallel regression assumption has been violated.

When this occurs, the estimation can proceed by merging the outcome category with a small number of cases into an adjacent category” (p. 125). Therefore, some adjacent categories were combined (the outcome variables “encounter satisfaction” and “encounter respect” and recoded into three categories; and “encounter trust” was recoded into four categories).

Finally, the OLR models were run for the recoded outcome variables and the Brant test for each model was applied. Based on the test results, the researcher found that the statistical software did provide test results for the encounter respect and encounter satisfaction models. The test results indicated that encounter respect model ($\chi^2 = 3.21$, $p = 0.986$), did not violate the parallel regression assumption. However, the Brant test was statistically significant for the encounter satisfaction model ($\chi^2 = 40.28$, $p < 0.001$), which shows that the model violated the parallel lines assumption. A closer examination of the Brant test results of encounter satisfaction model indicated that the “experimental condition” variable did not violate the parallel regression assumption ($\chi^2 = 1.39$, $p = 0.239$). Since the independent variable (experimental condition) did not violate the assumption, the researcher decided to apply the ordered logistic regression model to analyze the variable of “encounter satisfaction.”

OLR Findings for General Perceptions of Police

As previously stated, each of the survey items in the first section of the questionnaire were linked to several measured concepts including general perceptions of trust, general perceptions of police respect, general perceptions of police fairness and

general satisfaction with the police. Thus, the first four models (Model 1,2,3 and 4) were estimated by using the ordered logistic regression approach to examine the effects of the experimental condition on four (five-category) outcome variables that measured general perceptions. The ordered logistic regression analyses results for the measured general perceptions are presented in Table 16.

Table 16. Ordered Logistic Regression Models of the General Perceptions of Police

Variable	<i>DV: Trust (G)</i>		<i>DV: Respect (G)</i>		<i>DV: Satisfaction (G)</i>		<i>DV: Fairness-Neutrality -R-(G)</i>	
	Coeff. (SE)	OR	Coeff. (SE)	OR	Coeff. (SE)	OR	Coeff. (SE)	OR
Exp. Condition	.152(.185)	1.165	.397 (.175)*	1.487	.396(.175)*	1.486	-.138 (.177)	.871
Age	.017(.008)*	1.017	.030 (.008)***	1.031	.022(.008)**	1.022	.006 (.008)	1.006
Prior contact with police	-.239(.193)	.787	-.307 (.182)	.736	-.404(.183)*	.668	-.177 (.185)	.838
Demerit points	-.011(.006)	.989	-.006 (.006)	.993	-.002(.006)	.998	-.002 (.006)	.998
Gender	-.523(.308)	.593	-.230 (.294)	.795	-.428(.299)	.652	.057 (.283)	1.058
Education	-.013(.213)	.987	.039 (.199)	1.040	-.051(.201)	.950	-.150 (.203)	.861
Income	-.492(.211)*	.611	-.129 (.198)	.879	-.062(.199)	.940	.167 (.199)	1.181
Violation Type	-.182(.210)	.834	-.092 (.202)	.912	-.162(.203)	.850	.125 (.204)	1.133
Having Pol. Relative/Friend	.554(.198)**	1.740	.411 (.183)*	1.508	.506(.185)**	1.659	-.332 (.184)	.718

Notes: Coeff.: Coefficient; SE: Standard Error; OR: Odds Ratio; DV: Dependent Variable; G: General; R: Reverse Coded; Exp. Condition: Experimental Condition; *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

The first model used the construct of general trust with the police as the dependent variable. The OLR findings indicated that age ($p < 0.05$) and having a police family member or close friend ($p < 0.01$) had a statistically significant positive impact on the citizen perceptions of police in general, and earning more than 2000 TL a month ($p < 0.05$) had a statistically significant negative impact on the citizen perceptions of police in general, controlling for the other variables in the model. However, receiving the

experimental condition (procedurally just policing) was not statistically significant in this model. It should be noted this finding is consistent with the t-test results.

The second model was run to determine whether the experimental condition had a statistically significant impact on the perceptions of police respect in general. In contrast to the t-test results, the ordered logistic regression indicated that the experimental condition ($p < 0.05$) significantly affected the respondents' perceptions of police respect in general. The odds of reporting the highest police respect category rather than the somewhat police respect category was 48.8 % higher if the driver received the experimental condition than if the driver received control condition, holding the control variables constant²⁶. The results also showed that age ($p < 0.001$) and having a police family member or close friend ($p < 0.05$) had a statistically significant positive effect on perceptions of police respect, controlling for the other variables in the model. It should be noted that even though the t-test results revealed that the mean difference between the experimental and control drivers' general perceptions of police respect score was statistically insignificant at the usually accepted level of significance (0.05 level), the mean difference between the two groups was marginally significant, $t(491) = 1.49$, $p = 0.068$. Therefore, it was not surprising that the OLR results yielded a significant result for the experimental condition.

The third model estimated the effect of the experimental condition and control variables on general satisfaction with police treatment. The ordered logistic regression

²⁶ Because of its ease in the interpretation, a transformation of the odds ratio was taken and it was interpreted as the percentage increase (decrease) in the odds of being in a higher response category $([\exp(\beta_j) - 1] \times 100)$.

indicated that receiving the experimental condition ($p < 0.05$) had a statistically significant positive effect on perceptions of general satisfaction with police treatment, given that all of the other variables in the model were held constant. The odds of reporting the highest general satisfaction with police category rather than the somewhat satisfaction with police category was 48.6 % higher if the driver received the experimental condition than if the driver received the control condition, holding the control variables constant. The model also suggested that age ($p < 0.01$) and having a police family member or close friend ($p < 0.01$) had a statistically significant positive effect on perceptions of general satisfaction with police treatment, and prior contact with the police within the last 12-months ($p < 0.05$) had a statistically significant negative effect, controlling for the other variables in the model. It should be noted that the OLR finding for the experimental condition was consistent with the initial t-test results.

The fourth model estimated the effect of the experimental condition and control variables on overall perceptions of police fairness and neutrality. The ordered logistic regression analysis revealed that none of the predictors were statistically significant at the 0.05 level. As mentioned before, the experimental condition was also statistically insignificant for the general fairness construct in the previous t-test analysis.

OLR Findings for Citizen Perceptions of Police for the Specific SCO Encounter

Models 5, 6, 7, 8 and 9 estimated the effect of the experimental condition and control variables on the encounter specific perceptions. The results of the five ordered logistic regression models are presented in Table 17.

Table 17. Ordered Logistic Regression Models of the Encounter Perceptions of Police

Variable	DV: <i>Trust (E)</i>		DV: <i>Respect (E)</i>		DV: <i>Satisfaction (E)</i>		DV: <i>Fairness- Neutrality (E)</i>		DV: <i>Views of SCO</i>	
	Coeff. (SE)	OR	Coeff. (SE)	OR	Coeff. (SE)	OR	Coeff. (SE)	OR	Coeff. (SE)	OR
Exp. Condition	1.430*** (.220)	4.178	1.646*** (.279)	5.184	1.850*** (.207)	6.364	-.039 (.178)	.961	.643** (.222)	1.903
Age	.004 (.009)	1.004	.004 (.011)	1.003	.007 (.008)	1.007	.004 (.008)	1.004	-.015 (.009)	.985
Prior cont. with police	-.076 (.221)	.927	.035 (.263)	1.035	.074 (.201)	1.077	-.279 (.185)	.757	.045 (.231)	1.046
Demerit points	.002 (.008)	1.002	-.001 (.008)	.999	.003 (.007)	1.003	-.008 (.006)	.992	-.008 (.007)	.991
Gender	-1.342** (.469)	.261	-.561 (.486)	.571	-.192 (.310)	.825	-.094 (.286)	.909	-.749 (.444)	.472
Education	.207 (.238)	1.231	.519 (.291)	1.681	.094 (.218)	1.098	-.162 (.204)	.851	.274 (.262)	1.315
Income	-.082 (.233)	.921	-.114 (.275)	.892	-.175 (.215)	.839	.124 (.201)	1.132	.015 (.250)	1.015
Violation Type	-.418 (.234)	.658	-.677* (.264)	.508	-.163 (.225)	.849	-.144 (.204)	.866	-.174 (.253)	.840
Having police relative/ friend	.132 (.221)	1.141	.142 (.265)	1.152	.895*** (.207)	2.448	.714*** (.186)	2.043	.738** (.241)	2.091

Notes: Coeff.: Coefficient; SE: Standard Error; OR: Odds Ratio; DV: Dependent Variable; E: Encounter; *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

In the fifth model, perceptions of trust in the encountered police officer (a four category outcome variable) was regressed on the experimental condition and control variables by employing OLR. The results of this model showed that the experimental condition ($p < 0.001$) was both statistically significant and substantially increased the level of trust in the encountered police officer. The likelihood of reporting the highest encounter trust category rather than somewhat trusted category was substantially higher if the driver received the experimental condition than if the driver received the control condition, when controlling for other predictors in the model. This finding was consistent with the initial t-test results. The findings of this model also indicated that gender ($p < 0.01$) had a statistically significant influence on perceptions of trust in the encountered police officer.

The sixth model estimated the effect of the experimental condition and control variables on perceptions of police politeness and respect specific to the speed control operations (a three category outcome variable). The OLR results showed that the experimental condition ($p < 0.001$) was both statistically significant and substantially increased the level of agreement with the police politeness and respect statement. The likelihood of reporting the highest police politeness and respect category rather than the somewhat politeness and respect category was substantially higher if the driver received the experimental condition than if the driver received control condition, controlling for other variables in the model. It should be reminded that this finding was consistent with the previous t-test findings. The OLR also indicated that violation type ($p < 0.05$) was statistically significant in this model.

In the seventh model, the experimental condition and control variables were used to estimate the satisfaction with the SCO encounter (a three category outcome variable). In line with the researcher's expectations, the OLR finding was consistent with the initial t-test results. The OLR results showed that the experimental condition was both statistically significant ($p < 0.001$) and substantially increased the level of agreement with the encounter satisfaction statement. The likelihood of reporting the highest satisfaction with the encounter category rather than the somewhat satisfaction with the encounter category was substantially higher if the driver received the experimental condition than if the driver received control condition, controlling for other variables in the model. According to the model, having a police relative or close friend ($p < 0.001$) was also statistically significant in estimating the satisfaction with the SCO encounter.

The eighth model was estimated to determine whether the experimental condition had a statistically significant impact on the perceptions of police fairness in decision making specific to the encounter. The ordered logistic regression results were consistent with the previous t-test results that the neutrality and fairness in decision-making construct was statistically insignificant ($p=0.825$). Having a police relative or close friend was also found to be significant in this model ($p<0.001$).

The ninth model estimated the effect of the experimental condition and control variables on views of SCOs. In agreement with the t-test findings, the OLR results suggested that the experimental condition ($p<0.01$) significantly affected the views of the SCOs. The odds of reporting the higher agreement category concerning the necessity of the SCO operations rather than somewhat agreement category was 90% higher if the driver received the experimental condition than if the driver received control condition, controlling for other variables in the model. The results also suggested that having a police relative or close friend was also significant in this model ($p<0.01$).

5.5 Summary of Quantitative Data Analysis and Hypothesis Testing

In this section of the quantitative data analysis, results that were obtained from three different analyses were compared and hypothesis testing was conducted in light of the quantitative findings. In addition to the t-test analysis, the impact of the experimental condition was evaluated in 9 different OLR models; and in 2 OLS models. The hypothesis testing for the first and fourth hypothesis was conducted using the independent sample t-test and OLS regression results. The hypothesis testing for the second, third and fifth hypothesis was conducted using the independent samples t-test and

ordered logistic regression results. As already mentioned, the purpose of employing multivariate analysis was to test how robust the t-test results were. The t-test and OLS analysis results for the two latent dependent variables are presented in Table 18.

Table 18. Comparison of the Independent Samples t-test and OLS Findings

Variables		<i>T</i> -test	OLS
DV: General perceptions of procedural justness of police IV: Experimental Condition	Significance (p)	NS (0.055)	NS (0.197)
DV: Encounter perceptions of procedural justness of police IV: Experimental Condition	Significance (p)	S (<0.001)	S (<0.001)

Notes: S-Significant ($p < 0.05$), NS-Not significant ($p > 0.05$); *T*-test: Independent Samples *T*-test (two-tailed tests); OLS: Ordinary Least Squares Regression

The hypothesis testing for the first hypothesis indicated that both the t-test ($p=0.055$) and the OLS regression ($p=0.197$) findings were not statistically significant for the experimental condition, at the 0.05 level. Since the t-test and OLS results indicated a non-significant effect for experimental condition, there is no evidence that the procedurally-just policing encounter had an impact on the general perceptions of procedural justness of the police. Therefore, the researcher failed to reject the null hypothesis that procedurally-just policing encounter does not enhance citizens' perceptions of procedural justness of police in a general sense.

The results of the t-test and OLS analyses of experimental conditional and encounter perceptions of procedural justness of police were consistent. Both results demonstrated that the experimental condition was associated with perceptions of procedural justness of the police for the specific encounter. The OLS results confirmed that the direction of relationship is positive. That is, drivers who received the

experimental condition did report significantly more positive perceptions of procedural justness of the police for the specific encounter than respondents who received the control condition. Therefore, the null hypothesis was rejected and the alternative hypothesis (H4) was accepted.

The t-test and OLR findings for the ordinal outcome variables are presented in Table 19.

Table 19. Comparison of the Independent Samples t-test and OLR Findings

<i>Variables</i>		<i>T</i> -test	OLR
DV: General trust with the police IV: Experimental Condition	Significance (p)	NS (0.130)	NS (0.41)
DV: Perceptions of police respect in general IV: Experimental Condition	Significance (p)	NS (0.068)	S (0.023)
DV: General satisfaction with police treatment IV: Experimental Condition	Significance (p)	S (0.039)	S (0.024)
DV: Overall perceptions of police fairness IV: Experimental Condition	Significance (p)	NS (0.087)	NS (0.44)
DV: Trust in the encountered police officer IV: Experimental Condition	Significance (p)	S (<0.001)	S (<0.001)
DV: Police politeness and respect specific to the encounter IV: Experimental Condition	Significance (p)	S (<0.001)	S (<0.001)
DV: Satisfaction with the SCO encounter IV: Experimental Condition	Significance (p)	S (<0.001)	S (<0.001)
DV: Perceptions of police fairness in decision making specific to the encounter IV: Experimental Condition	Significance (p)	NS (0.45)	NS (0.83)
DV: Views on SCOs IV: Experimental Condition	Significance (p)	S (<0.001)	S (0.004)

Notes: S-Significant ($p < 0.05$), NS-Not significant ($p > 0.05$); *T*-test: Independent Samples *T*-test (two-tailed tests); OLR: Ordered Logistic Regression

The second hypothesis of this study suggested “citizens who experienced procedurally-just traffic encounters will be more satisfied from the encounter than citizens who experience “routine” traffic enforcement”. Since the t-test and ordered

logistic regression findings were both statistically significant, hypothesis 2 was accepted. Specifically, the ordered logistic regression analysis indicated that the experimental condition substantially increased the likelihood of reporting higher agreement with the encounter satisfaction statement. In other words, the drivers who received the experimental condition did report higher levels of satisfaction with the police treatment that they received during the SCO encounter.

Another hypothesis (H3), which was formulated to explain the impact of the experimental condition on the perceptions of police respect stated, “Citizens who experience procedurally-just traffic encounters will have improved perceptions of police respect in relation to the encounter than citizens who experience “routine” traffic enforcement”. Given the significant t-test and OLR findings, this hypothesis was also accepted. Specifically, the OLR analysis indicated that when controlling for all other variables, receiving the experimental encounter substantially increased the likelihood of reporting higher agreement with the encounter specific police politeness and respect statement.

The last hypothesis (H5) of this study stated, “Citizens who experience procedurally-just traffic encounters will have improved views on speed enforcement relative to citizens who experience “routine” traffic enforcement.” This hypothesis was tested with a t-test and OLR multiple regression with the dependent variable being the views of the SCOs. Both analyses confirmed Hypothesis 5, which suggested that drivers who received the procedurally-just encounter reported more positive views on the SCOs. Thus, this hypothesis was also accepted.

Nevertheless, in this section of the quantitative component of the dissertation, the researcher evaluated whether significance for outcome variables in t-tests still held in an OLS or OLR regression. Based on the findings of the significance tests, hypothesis testing was conducted. The researcher accepted all formulated hypotheses except Hypothesis 1, which suggested that procedurally just policing encounter had an impact on the general perceptions of procedural justness of the police. The final chapter of this dissertation deeply elaborates upon these research findings and proposes possible explanations for the unexpected outcomes.

Descriptive and Contextual Analysis

Introduction

In the previous section, the impact of procedurally just policing on citizen perceptions was evaluated by employing several statistical analysis techniques. This section of the study aimed to enhance our understanding of police citizen encounters during the SCOs and provide a clear picture about the nature of the encounters. Specifically, drivers' general views on the SCOs and their reaction to the experimental intervention are elaborated in this section.

First, the researcher aimed to discover the drivers' views on SCOs that were not captured by the quantitative analysis. As already noted, the last question of the survey question asked the drivers whether they "would like to share any other comments or ideas about their SCO encounter." After analyzing 278 driver responses to this question, the researcher identified seven key themes or categories of responses. The negative and positive comments that drivers made about the SCO's were discussed under these categories along with the driver statements.

Second, the researcher's field observations and police officers' statements were included. As mentioned, the researcher participated in most of the stops and eye-witnessed many encounters between the drivers and police, so the reactions of the drivers that he observed during the encounters was included. Some of the officers also shared their thoughts and experiences, so these are also mentioned in this section.

5.6 Perspectives of Drivers

5.6.1 Disrespectful Policing

The drivers who responded to the open-ended question considered disrespectful policing as a common issue for Turkish policing. Many drivers who spoke about impolite and disrespectful police behavior argued that the officers they encountered during the recent SCO were polite, but they stated that they have encountered many impolite police officers previously. A well-off and well-educated woman driver said, "Today the policeman were nice to me, he was kind, but the officers I interacted with before were impolite."

Particularly, the drivers who received the procedurally just policing made more favorable comments about the conduct of the encountered officer:

Today the police were kind and respectful just because of your survey I guess. Unfortunately, they are not always like that. Sometimes they write you a traffic ticket but you do not know why that is. They usually do not give us an opportunity to talk. This is the first time I ever interacted with a respectful officer.

Another driver made a similar comment, "I was surprised because they were so nice today. Now I understood why they were like that. Generally, our officers are not polite and kind. Usually, they do not even let you talk." Since these drivers did not realize that they received the procedurally just policing encounter, they believed that officers in

the SCOs were respectful because of the survey. One driver explained, “Do you believe that they are always kind like this? I am sure they are kind today because of your research.” Another driver said: “It was like a joke. They are not always kind like this, so I suspected that this was because of the survey.” As can be understood from these statements, the drivers were skeptical about respectful SCO encounters and stated that this was not the usual police behavior.

Some drivers mentioned that new generation officers are more polite than the past generation of officers. According to these drivers, it is easier to interact with younger officers. A driver said, “Not older officers, younger officers are nice. They are polite and kind.” Likewise, another driver explained, “new generation cops are well educated and they are doing the right thing. Police officers were not like this in the past.”

The drivers also voiced their concerns about police ego and its effect on police politeness. A driver said, “They should not wear their uniform to show off and boost their ego. They should just wear it for service. They (police) may ask the drivers license in a disrespectful way or they may ask for this as they did today. The latter is better of course and that would also shape our attitude towards them.”

Nevertheless, in their responses to the open-ended question respondents complained about disrespectful policing practices in general and suggested that officers should be more respectful to citizens in their interactions with them. On the other hand, particularly the drivers who received the experimental condition like the way police treated them during the SCO encounter. Some were even surprised by the politeness of the police.

5.6.2 *Trust in the Police*

The literature suggests that when the members of the public feel that police are trustworthy, legitimacy of police actions would be enhanced; and as a result, the citizens would feel that they ought to defer to decisions made by police (Tyler, 2011; Sunshine & Tyler, 2003). In accordance with the literature, responses to the last question of the survey reflected that the level of trust in police has an impact on acceptance of and compliance with police authority and actions.

Several drivers mentioned that since they did not trust the police, they would not be convinced of their “guilt” without seeing the evidence that shows their violation: “They should show me the camera recordings, I do not trust them and I disagree that I was over the limit. If they had shown me the records, I would believe them. Besides, the officer was not polite.” Similarly, another driver who was a teacher said, “Buses are violating traffic rules, but the police say nothing to them, they do not stop them. They said that I was over the limit, but I do not believe it. I want to trust the police, I have to trust the police, but believe me I do not trust them.” Likewise, another driver noted, “I do not trust officers and I do not accept that I was over the 60 km/h limit.” Another driver complained, “I do not trust police at all. What they did today is a form of robbery.”

A middle age businessman stated that he does not trust the police because of his past experience: “I do not trust police. Once, I was slapped in the face by police.” Another businessman driver compared Turkish police officers with the officers abroad and explained why he does not trust police:

I am a businessman and I have visited many countries. The main difference between our officers and those overseas our officers are not decent and respectable. They do not have dignity. In developed countries, officers have self-

confidence and they are respected. When they stop you abroad, you do not object and you believe that you were stopped because of your violation. Would you trust an officer if he does not have those characteristics.

On the other hand, several drivers stated the police are more trusted now than before and some also noted that they trusted the encountered officer:

I should say that I am satisfied by the police treatment today. I was treated fairly well. But overall, I am not satisfied from police; I do not like them and do not trust them. Today, it was different, I have no objection to their decision today, they said I have exceeded the speed limit and I believed them. We rarely encounter such respectful officers.

Similarly, another respondent said, “My trust in the police has increased in the recent years. I wish everyone would obey the law, so there would be no need for enforcement. I should also say that I was very satisfied with today’s encounter.” Likewise, another driver stated, “They were not trustworthy like this before.” Another noted, “It was an excellent treatment. I do not trust my brother, but I do trust police.”

Nonetheless, drivers believed that police should be trustworthy so that the drivers would comply with the police decisions even when they were issued a citation. From the drivers’ responses, it appeared that when citizens found the police trustworthy, the police could effectively pursue their traffic enforcement mission and gain public support.

5.6.3 Corruption-Favoritism

As previously mentioned, it has been argued that the TNP’s traffic units’ reputation has been tainted because of corruption and favoritism allegations. Accordingly, some respondents in this study stated that favoritism is still prevalent in the organization despite the latest achievements in transparency and accountability. The drivers raised three main concerns about the ongoing unfair traffic enforcement practices.

First, they argued that police could not or would not give a traffic ticket to a privileged person. In support of this view, one of the drivers said, “What is irritating is when the speeder was a guy in a luxurious car, the police would do nothing; but when they find a poor guy, they would give him a ticket. This is what our police and government do. I can easily go over the 50 km/h, even I can reach that speed by running!” Likewise another driver complained,

They are not fair, they do not protect our rights, and they protect the benefits of their masters and the privileged people. Once, I filed a complaint for a traffic violation, but they did nothing because the guy had strong connections, you know, he belonged to the upper class. If they really want to enforce the law, they should do it everywhere and to everyone.

In support of this view a driver noted that “I want them to treat everyone equally, but I am not sure about it. There was a car in front of me and the officer let the driver go without giving him a ticket, why? Why did he stop me then? After seeing that, I felt that they are favoring some people. There is not equal treatment.”

Second, drivers also claimed that that the police were not giving tickets to their colleagues and their friends: “They give us tickets, but they do nothing when their chiefs speed. They would not give a ticket, if it was his friend.” Likewise, another driver said, “If there is a rule, everyone should obey it. I think the police themselves are not obeying the rules. They should also check the speed of police cars.” Similarly, a female driver noted, “It is impossible to drive at a speed of 50 km/h on this road. We see how cops drive; they are also speeding. Even, some are running a red light.” Another driver told how he avoided a traffic ticket thanks to his friend: “Once, I was driving with a friend of mine in the car. When police stopped us, he mentioned his police relative and the officer let us go.”

Third, some drivers also argued that petty corruption is still an issue in the context of traffic enforcement. A driver claimed that the police are overlooking some violators because they receive gifts from them:

People are speeding at the Ozal intersection; they do nothing to stop those guys. But at the end of the year, they start stopping cars, they are corrupt, they are taking gifts. When a guy sends them a package of cigarettes, they do what he wants. When their supervisors are with them during the stops, they enforce the law perfectly, otherwise not.

On the other hand, some drivers suggested that new generation of officers are far better than the older generation officers in terms of transparency. A retired truck driver explained how the police have become more transparent over the years:

Their (police) attitude towards us is way better now. They were corrupt before. You know, they were taking bribes. When I was a truck driver, we were giving them some money and they would let us go, so we were driving however we wanted. Now, there is no way. When they stop me, I get nervous because I know that they would not overlook my violation if I give some money. It is the new generation cops I guess, they are different, more educated.

Nonetheless, many drivers considered favoritism as one of the main problems for TNP's traffic units. They believed that officers enforcing traffic rules sometimes favor local residents, business owners, fellow officers, friends or acquaintances, relatives of another officer, ex-officers, medical doctors, taxi or bus drivers and government employees. Specifically, there is a perception that the police favor some individuals who hold certain positions or work in certain occupations. They argued that a luxury vehicle that belongs to an affluent people is less likely to be stopped; whereas a modest car is more likely to be subjected to traffic stops.

5.6.4 The Perception of Police Setting-up Speed Traps

Another common complaint was the argument that the police were setting up “speed traps” for the drivers. Many drivers criticized the operationalization of speed controls and they argued that the speed enforcement practices of the police are inappropriate and inefficient: “They are obviously setting up speed traps, I could find a way to avoid the ticket, but I would not.” Another driver explained, “They should not check the speed on this road. It is like a trap. It is not reasonable. They should go and check the speed on highway. There are not any people around, so I did not endanger anyone’s life. Do you think driving at the 70 km/h is too fast on this street?”

Another driver complained, “This is clearly a trap man! They should beware of Allah! They are acting like revenue officers.” A well-off driver who had a luxurious car made a similar comment:

It is like falling into a trap. When you drive at high speed in an empty road they would stop you. They should focus on red light violations or DUI stops instead. They are setting up these controls in inappropriate locations. I think they are just setting these traps to steal our money. I do not trust them anymore. My taxes are paying their salary, so they do not have a right to rob me.

Some drivers argued that speed controls should be more transparent and the drivers should be warned beforehand. One minibus driver said, “they should tolerate us, my speed was slightly above the established limit or they should have warned us beforehand. If they decided to do this, they should do it everywhere and at all times, and they should not be hiding in a corner.” Similarly, another driver argued, “They should inform people about speed controls. The speed limit is 50 km/h on one street and 60 km/h on another. This makes me confused. They need to put more speed limit signs. If they would clearly set the rules, we would obey them.”

As can be understood from the statements above, many drivers believed that the police are abusing their authority by setting up “speed traps.” The drivers expected police to be more transparent and reasonable for the SCOs and enforce traffic rules consistently.

5.6.5 The Perception of Ticket Quota

Although the TNP officials stated that they do not have a ticket quota, some drivers believed that revenue rather than safety was the real motivation behind the SCOs. A driver said, “They (police) have to fill their ticket quotas, that's why they are writing so many speeding tickets. I was hoping that I would not be one of those victims, but it seems that I am now.” Another driver made a similar comment: “The speed limits are too low, I think government is giving people speeding fines to fill the budget gap. They should not set up the speed control on this street, and I do not believe that I was speeding. They need money, when they need it they do so. They do not care about saving lives. I believe they are trying to make quick money.” Another driver elaborated this concern, saying: “They should give tickets for citizens safety. They should not be setting up traps to make money for the government, I believe that they are doing this controls for money, not for our safety.” Similarly another driver said, “Damn it. Don't they have anything else to do? At the end of the year, at the end of the month they are giving tickets, this is what happens all the time.” It should be mentioned that very few drivers who were assigned to the experimental condition stated that police were carrying out the SCOs to make money for the government when compared with the control drivers.

5.6.6 Perceptions of Ethnic Profiling

Racial profiling is a major concern for police practitioners and scholars in the United States. In particular, there is a perception that African-Americans are subjected to

traffic stops at higher rates than whites (Ingram, 2007). Unlike the United States, the targeting of individuals based on their race or ethnicity is not considered as a troubling nationwide problem in Turkey. However, three ethnically Kurdish drivers who answered the open-ended question argued that police are disproportionately stopping or citing them because of their ethnic origin. An ethnically Kurdish driver from Sanliurfa province voiced this argument:

They gave me a speeding ticket just because I am Kurdish. It is not just speeding fines; they are giving us all kinds of fines, just because of where we are from. I hope they will not get any benefit from it. These Turks have made the country an unlivable place. Their supervisors gave them a quota and ordered them to fill that up. If you bribe them they would overlook your violations. My speed was just 3 km/h above the limit. They are looking at your plate number and if they would see that you are from the east, they give you a ticket. This happened to me many times when I was in Sanliurfa. Damn it. They are all stupid. F[fuck] up. They are all starving. God damn you all.

Likewise, another driver from Van province argued that the police were profiling ethnically Kurdish citizens and shared his own past experience with the police and: “I do not want discrimination, they should be fair to everyone. Once they beat me up, one officer hit me in the stomach with his radio.” Another ethnically Kurdish driver from Mardin province even used insulting words towards the officers, “Goddamn officers, they are all stupid. F[fuck] their ticket, they are all starving, I hope they would not get any benefit from it. Stupid Turks, goddamn you all.”

In order to understand why these drivers held such perceptions and why some of them even felt hostility towards the police, one needs to know the Kurds and the history of the “Kurdish issue” in Turkey. First of all, it should be mentioned that the Kurds have never been identified as a minority group throughout Turkish history. The Kurds and Turks share a similar cultural and religious heritage. Therefore, it is hard to identify

whether a person is a Kurd or not just from their physical appearance. The only way to identify an individual as Kurdish is through the spoken language. If a person speaks Kurdish or any Kurdish dialect, this indicates that he or she is Kurdish. However, Kurds have different dialectics and there are also some people who cannot speak the language but identify themselves as Kurds (Bal & Laciner, 2008).

The “Kurdish issue” or the “south-east Anatolian issue” (as it is widely known in Turkey) has been a phenomenon of major significance in the country since the late 1960s. Elphiston (1993) argued that the main problems of Kurds in Turkey are freedom of education in the Kurdish language, freedom of traditional practices, and freedom to publish in Kurdish. Starting from the 1970s, the Kurdish socialists exploited these problems and blamed the Turkish government for restricting Kurdish citizens’ cultural rights. As a result, they took a radical approach, which led to the formation of the Marxist-Leninist terrorist organization, the Kurdistan Workers Party (PKK) in 1978. After its establishment, the PKK not only carried out lethal terrorist attacks against the Turkish security forces, it also targeted other Kurdish groups who participated in political affairs starting from the 1980s with an aim to establish an independent Kurdish state (Teymur & Smith, 2008). As a result of the PKK’s terrorist activities, approximately 35,000 people, including governmental officials and Turkish-Kurdish civilians, have lost their lives until today. In order to protect the citizens and government officials from Kurdish originated PKK terrorism, the government sharply escalated security measures in some Kurdish populated cities in the eastern part of the country starting from the 1990s (Unal, 2009, p.36). However, the strict security measures have been criticized, and it has

been argued that Turkish law enforcement and the army has used excessive force while trying to counter PKK terrorism (Balci, 2012).

Nevertheless, the excessive use of force allegations undermined the trust between some Kurdish people and the government. It was argued that increased stop and search practices of law enforcement in the eastern cities of Turkey, allegations of excessive/disproportionate use of force and human rights violations against ethnically Kurdish citizens harmed the trust between the law enforcement officials and the ethnically Kurdish citizens (Unal, 2009; Balci, 2012). Therefore, it can be argued that because of political issues, unpleasant experiences with police and excessive use of force allegations some ethnically Kurdish citizens believe that the police are targeting them based on their ethnicity and discriminatory practices by law enforcement against ethnically Kurds is common.

On the other hand, some ethnically Turkish drivers complained that police cannot and do not enforce the laws in Kurdish populated provinces of the country sufficiently. One driver complained, “they should not do the SCOs in here, if they have to power to enforce the law why do not they enforce it in the eastern part of Turkey.” Another driver voiced his concern on this issue by criticizing the disproportional distribution of SCO locations and argued that the police cannot enforce the traffic laws in Kurdish populated neighborhoods of Adana City: “Everyday, police are conducting these stops at this part of the city. Why do not they conduct stops in Daglioglu district? Because they cannot.”

In sum, the responses indicated that some ethnically Kurdish drivers believed that the police are singling them out when enforcing the traffic laws. The language used by

these drivers also showed that they are unsympathetic towards the police. On the other hand, some Turkish drivers blamed the police for not enforcing the law in the Kurdish populated neighborhoods adequately.

5.6.7 Unrealistic Speed Limits

Another commonly raised issue regarding SCOs was the unrealistic speed limits. Among the 278 drivers who answered the open-ended question, 58 of them stated that the speed limits had to be increased. These drivers argued that the speed limits were not “reasonable.” A driver said, “This speed limit is unrealistic, they (police) would also easily exceed this limit themselves when they are driving.” Another driver elaborated, saying: “We have safer cars on the roads now, so these limits are inappropriate for these cars. If I had driven within the limits with this car, people behind me would swear at me.”

On the other hand, some drivers believed that the limits were appropriate and the drivers should not blame anyone else for their violations. One driver argued, “Some people are complaining about the speed limits, but I do not agree with them. There is no need for a speed limit increase. They gave me a ticket and the scales fell from my eyes. Honest citizens would always be satisfied with the police.”

While a considerable number of drivers believed that the speed limits were not realistic, the majority of these drivers criticized the police rather than the local authorities. The drivers argued that the police had to be more flexible and more tolerant towards their violations: “Speed limits are way too low. They (police) should not be too strict, they should be more flexible and tolerant. This is my first traffic citation ever. That’s why I could hardly bear this citation.”

In some cases attitudes towards the system became cynical and local authorities were criticized for setting unrealistic speed limits: “They are just bothering people, do you think the speed limit of 50 km/h is realistic on this road? We are suffering here because of the coordination problems between the authorities, local authorities did not establish the appropriate speed limit for this road.” Another driver added that once the limits were set by police have to enforce them: “You can see what is going on. Damn it. Lawmakers’ faults brought us into confrontation with the police. I know there is nothing the police can do.”

In sum, the majority of the drivers who talked about the designated speed limits believed that the limits are too low, so they demanded an increase: “They should increase the speed limits. We are obliged to drive very slowly, which is almost impossible for me. And speeding fines are very high.” Some drivers argued that if the speed limits were set properly, most of the drivers would not have been ticketed. Some drivers also advocated that driving under the speed limit on some streets would just cause driver frustration.

5.7 Field Observations

As mentioned before, the researcher participated in many stops and had the opportunity to observe many police-citizen encounters. However, the researcher observed these encounters from a distant location, so he could not hear the entire conversations between the drivers and police officers. Despite this disadvantage, the researcher noted down interesting incidents that he observed and the officers’ statements about their experiences.

In many experimental stops, drivers seem to be amazed by the treatment that they received. A driver said, "God bless them. I would like to thank them for the treatment. Maybe, I am the only driver who wanted to thank to them after being ticketed. They should always act like this." Similarly, another driver stated, "I wish they would always behave like this. I thought they were very good today." Likewise, a driver who was an engineer said, "I was really surprised with the treatment. I am really pleased with their nice attitudes. But, I think they should not set radar on Sundays. Traffic is not that intense today."

An unusual incident that happened during the stops may give us an idea about the driver reaction to the experimental condition. On the second day of the research, the researcher saw a young driver shake one of the experimental officers hands and then hugged him. The researcher thought that they knew each other, so that is why they were so friendly. Later, the officer was asked about driver's unexpected reaction. The officer explained that the driver was a young man and he did not have a driver's license. Since he was driving without a license and he was stopped because of speeding, he was very nervous at the beginning. The officer explained, "After approaching him, I started to read him the script and try to be nice. I guess he was so scared and was not expecting such a friendly interaction, he hugged me after he got off the car."

On the other hand, the researcher also observed that in some incidents the interactions between the officers and drivers turned into a heated discussion, when the officer treated drivers with artificial kindness and courtesy. It was observed that some senior officers who were delivering the control condition tried to display themselves as polite and respectful officers, but could not manage to remain polite until the very end of

the interaction. Therefore, a polite and respectful approach to the driver at the very start of the encounter turned into an unfriendly interaction between the driver and the officer at the very end. The officers' poor communication skills might also have played a role in arriving at this unpleasant outcome.

The officers were asked to share their opinions about procedurally just traffic stops. Some of them stated that they were skeptical about the effectiveness of procedurally just policing intervention. A senior officer told the researcher that he did not believe that acting in a procedurally just manner would "work" and make things better. He argued that giving drivers a voice and being kind to them would just make things difficult for them. He said,

If we would treat everyone with respect, some drivers would just abuse it and would give us a headache. Treating everyone with respect! No, I am not buying it. When you give them an opportunity to talk they would come up with many excuses. It is just a waste of time and we do not have time to listen to everyone.

In accordance with the officer's argument, it was observed that there were some incidents where the drivers abused the officers' kindness. In one incident, an officer stopped a middle age male for speeding and requested his documents in a polite manner to issue a speeding citation. However, the driver did not follow officer's orders and raised his voice while criticizing the stop. The officer explained: "You see, I stopped him just like others for speeding and tried to be kind to him, but he was aggressive towards me. I also got angry and stopped being kind to him. I started to speak in the language that he can understand. I took my time examining his vehicle, and there it is. He had tinted windows. When I reminded him that he also will be ticketed for the tinted windows, he went mad." The researcher observed that this unpleasant incident sapped the officer's

morale and motivation for the research. Later, the officer told the researcher that the driver had a criminal record, so he might have been hostile towards him for that reason.

In another case, an officer initiated the stop by following the designated procedure for the experimental condition (read the script and informed the driver about his violation), and then requested the driver's documents. However, the driver did not give any of his documents and did not comply with the police orders. The officer reminded him that he should give his documents to the officer according to the law. The driver responded that he was not driving fast, so he would not accept a traffic fine. When the other officers noticed that the driver was insistent, they interfered in the situation by telling the driver that they would arrest him if he would not comply. The driver agreed to provide his documents after being threatened with arrest. After this incident, a senior officer argued that this is what happens when they treated drivers with respect: "Sir, you see what happened, when we treat them like this, this is what we got. They think that we are weak when we behave like this; you need to show them that we are confident enough to enforce the law."

As the senior officer argued above, some officers believed that procedurally just policing would weaken their authority. In addition, some other officers wanted to maintain the status quo and did not want procedurally just stops to turn into a routine procedure for police, because they believed that it would just increase their workload.

On the other hand, there were also officers who believed in the advantages of the procedurally just policing approach. It should be noted that most of these officers were middle aged or young officers. An experimental officer put this view forward. He argued that a friendly approach and using better language when addressing drivers during the

traffic stops really facilitated their work. When he was asked for his opinions on the procedurally just encounter he noted, “it takes time, but it works.”

In the same way some drivers stated that they tempered their approach towards an officer according to the officer’s attitude. A driver said, “The officer that I encountered today was really nice. If the officer had been nasty, I would also get nasty too.” Similarly a young male driver noted, “Your attitude (as a citizen) towards police at the beginning would affect officer’s attitude towards you.” Likewise, another driver who had a luxury car stated, “If the officers would be nice to us, we would be nice to them. If he had been annoying, like then I would be annoying. This is reciprocal. That’s why I have never had any problems with police.” These statements indicate that if the drivers felt they were aggrieved or annoyed when they had stopped, they would respond with the same reaction.

It was also observed that some employees argued that the police should overlook their violations because they were also working for government. A male driver who worked at the government run hospital said, “I am also a government employee, I am working for the government just like you, you should help me with this.” Similarly, a doctor who works at the government run hospital argued, “they should be flexible for doctor’s violations. We are rushing to the hospital to save peoples lives. Time is very important for us.” The officers mentioned that many government employees are disclosing their occupational positions during the controls to avoid a traffic ticket. The officers stated that medical doctors, municipality workers, soldiers, academicians, teachers, nurses, even journalists try to avoid ticket by saying that they are also working for the public. The researcher also witnessed such an incident.

One day, the officers were conducting a SCO near a local hospital. They stopped a white luxury car and assigned the driver to the experimental condition. The officer approached the car and followed the designated steps for the experimental condition. The driver of the car said he was a medical doctor, so he asked officers to overlook his violation. The officers said they are giving a traffic ticket to all drivers who were stopped for speeding and they cannot favor him. However, he insisted on avoiding a traffic ticket and called some of friends he knew from the APD to ask for help.

Nevertheless, from the researchers observations, it can be concluded that both the drivers and officers expect respect from each other, some officers were skeptical about the procedurally just policing and wanted to maintain the status quo, there were also some officers who believed that the procedurally just policing would have an influence on driver acceptance of police authority and orders.

CHAPTER 6: CONCLUSION AND DISCUSSION

The relevant literature on police legitimacy and procedural justice suggests that when citizens perceive police actions as procedurally just, they view the police as legitimate and are more likely to consent to their decisions (Sunshine & Tyler, 2003; Tyler, 2006; Tyler & Huo, 2002; Tyler & Fagan, 2008). However, as mentioned previously, little empirical research evidence exists on the outcomes of procedural justice policing. To the author's best knowledge, this study is the first randomized controlled trial in Turkey and second in the world conducted to examine the outcomes of the procedurally just policing concept. Therefore, it is believed that this dissertation has made a significant contribution to the policing literature by providing solid evidence on how procedurally just policing can shape citizens' perceptions. In this final chapter of the dissertation, an overview of these findings is presented and conclusions drawn from the study are described. Suggestions for future work and policy recommendations are also made.

6.1 Summary and Discussion of Key Findings

This dissertation research yielded several important findings on procedural justice and police citizen encounters. The findings can be discussed under three categories: general perceptions of the police, encounter specific perceptions of the police and views of the SCOs.

First, the preceding statistical analyses provided mixed results concerning the influence of procedurally just policing on the overall perceptions of police. One of the present research questions was whether procedurally-just policing encounter enhances

citizens' overall perceptions of procedural fairness by the police. If the findings had suggested that a single procedurally just encounter could have shaped the general views of police, police could have restored their image and could have gained support from the citizens in a short period of time through procedurally just encounters. However, the findings of this research suggested that a "quick fix" is not possible when it comes to the issue of people's broader views about the police. In contrast to the researcher's expectations, the quantitative analysis showed that the single procedurally just encounter conducted in this study did not improve overall perceptions of procedural fairness of police.

On the other hand, this does not mean that procedurally just policing does not have any long-term impact on people's broader views about the police. Despite the insignificant findings on the citizens' general perceptions of the police, it was found that the experimental condition had some effect on some of the general views of police indicators. Specifically, it was found that the procedurally just policing encounter had a significant positive effect on general satisfaction with police treatment. Furthermore, significant OLR and marginally significant t-test results for the respect item indicated that the procedurally just policing encounter also affected drivers' general perception of police respect to a certain degree.

Nevertheless, it can be concluded that a single procedurally just policing encounter has a limited influence people's general views about the police, but a striking impact on broader views should not be expected. Drivers' statements reported in the descriptive and contextual analysis section of this dissertation reflect the fact that citizens' broader views about the police were mainly shaped by accumulated individual

police experiences. Therefore, it can be argued that procedurally just policing encounter can enhance citizens' overall perceptions of procedural fairness of police if these experiences can be accumulated. In other words, if the citizens experience more procedurally just police interactions in their daily lives, their views about the legitimacy of the police can be enhanced in the long run.

Second, the researcher was also interested in investigating the effect of procedurally just policing on perceptions of police for the specific encounter. In this respect, findings from the present study are consistent with previous research on procedural justice. These findings show that procedurally just encounters have a substantial impact on encounter specific views. As expected, drivers who received the experimental SCO encounter reported more positive perceptions of procedural justness of the police for the specific encounter than the respondents who received the control procedure.

The results were also significant for the encounter perception items. Drivers who received the experimental SCO encounter reported significantly higher trust in the encountered officer, higher satisfaction with police, and stronger perceptions of police respect in relation to the encounter than drivers who received the standard SCO encounter. These quantitative findings demonstrate that the quality of interpersonal treatment and decision making that occurs during police-citizen encounters, can enhance citizens' trust in the encountered officer, increase satisfaction from the encounter, and improve their perceptions of police respect in relation to the encounter. The descriptive and contextual research findings also supported this finding. The majority of the experimental drivers who responded to the open-ended question stated that they were

satisfied with the way police treated them, and they perceived the recently encountered officer as being respectful and trustworthy.

The literature on procedural justice suggests that such improvements in the people's perceptions will enhance the legitimacy of the police, encourage cooperation and lead to compliance with police orders. As already noted, TNP's traffic units are struggling to gain compliance during traffic stops due to the prevailing lower than desirable levels of satisfaction and trust in the traffic officers. Therefore, the introduction of procedurally just policing might remedy this problem. The findings of this study also suggested that traffic officers could gain drivers' trust, increase the level of satisfaction with SCO stops, and improve perceptions of police respect through procedurally just approaches. In turn, all these improvements would enhance the legitimacy of the stop and could lead to greater compliance during stops.

Finally, the study also provided findings about citizen attitudes towards speed enforcement operations. These operations are among the most well enforced traffic enforcement practices of the TNP. However, as mentioned in the descriptive and contextual analysis section, some drivers believed that these operations are pointless and they are ineffective in improving road safety. The quantitative findings indicated that experimental drivers reported more favorable views surrounding speed enforcement operations than the control drivers. In other words, procedurally just policing encounter increased the driver's perceptions of the legitimacy of speeding stops. In light of this finding, it can be argued that increasing the legitimacy of stops will possibly increase the willingness of drivers to obey the directives of the traffic police and will thereby reduce the prevailing number of disputes between the police and citizens during speeding stops.

It should also be mentioned that the results did not provide evidence showing that receiving the experimental encounter improved confidence in police fairness-neutrality. It is believed that citizens' perceptions on favoritism did not change after the procedurally just encounter because of citizens' past experiences. Favoritism is a deep-rooted problem in Turkey, and drivers in the study reported that they have witnessed many injustices during their prior encounters with government officials. The study findings showed that it is not easy to change this perception in a single encounter. This perception may change in the future when citizens repeatedly see that police are nondiscriminatory, neutral in decision making, do not favor certain people, and treat everyone similarly.

In sum, the quantitative findings of this dissertation suggested that procedurally just policing encounters not only enhances citizen perceptions of the police in relation to the encounter, but also improves the level of citizen satisfaction derived from police services. Although the study did not directly measure the impact of the procedurally just policing on compliance, it is expected that another outcome of a procedurally just encounter would be higher levels of compliance with police directives during encounters.

6.2 Policy Recommendations

The findings of this dissertation contribute to our understanding of procedural justice by providing solid empirical evidence about the effectiveness of procedurally just policing on real-life encounters. The study findings have important implications for how the police can enhance public satisfaction and legitimacy. The findings of this research can be used to increase citizen satisfaction and improve the interaction between police and citizens in Turkey. Specifically, the study may inspire practitioners to develop new

strategies and provide them with ideas on how to behave towards drivers during traffic stops. Nonetheless, the study suggests obvious implications for police policy and practice.

Prior research on procedurally just policing usually used survey research, observational or administrative data to examine the relationships between procedural justice and citizen perceptions of police behavior (Tyler, 2006; Tyler & Folger, 1980; Tyler & Huo, 2002). However, the majority of these studies did not test process-based policing in real-life conditions, and some of these studies had no practical applications. This present study, in contrast, tested whether procedurally just policing shapes perceptions of police by conducting a field experiment. While operationalizing the key ingredients of procedural justice, the study provided clear procedures to practitioners on what was to be implemented in a procedurally just policing encounter. The quantitative findings and observations of police citizen encounters confirmed that the key ingredients of procedural justice can easily be applied to actual policing practices. Policy makers need to know what should be done and how new procedures would affect the attitudes of citizens before deciding to implement an intervention. This research may help them to understand that procedural justice is not an abstract concept and can be achieved even in a short police-citizen encounter.

The findings of this study also provided improved insight into how procedural justice principles' impact on citizen perceptions in the Turkish context. Most research on the effectiveness of procedurally just policing in enhancing public perceptions of police and increasing public satisfaction has been conducted in western countries, and our knowledge on the applicability of procedural justice in different parts of the world is very

limited. Perceptions of police legitimacy may also originate from political or historical perspectives. Due to the cultural differences, changing police behavior through procedural justice may not have a significant impact on citizens' perceptions of police as has been found in some western countries. Therefore, before making policy suggestions on police behavior in the light of western literature, one needs to acknowledge that a successful intervention in one jurisdiction may not produce the same impact in other jurisdictions. From this perspective, this research contributed to the literature by shedding light on the applicability of western-based knowledge in a non-western country. Since the research was conducted in Turkey, TNP officials can extensively utilize data from this study to improve their policing style and to develop better interactions with the citizens they serve.

Previous research found that perceived fairness of police treatment has a significant positive effect on citizens' views of police, independent of the outcome (Sunshine & Tyler, 2003; Thibaut & Walker, 1975; Tyler, 2006). Consistent with the previous research, the present study suggested that the police can enforce the laws and increase the number of positive perceptions towards themselves at the same time. Since the role of the police is to enforce the law, they may not have control over the outcomes of their actions at all times. As presented in the quantitative findings, despite the undesired outcome (receiving a speeding ticket), drivers reported more favorable views regarding this form of encounter and the encountered officer, when they saw that the officer recognized their rights, gave them a voice, and provided them with a detailed explanation for the stop. Therefore, police practitioners can utilize the results obtained from this research to avoid negative citizen perceptions and alleviate citizens' stress

caused by unfavorable attitudes.

As mentioned before, many disputes are found to arise during traffic stops in Turkey and some citizens do not comply with police orders. Many drivers go to court and contest the traffic ticket, as well as calling the police chiefs to complain about disrespectful police behavior. The present study found that the experimental intervention increased citizen satisfaction and enhanced the citizens' perceptions of police respect. Thus, the TNP could potentially minimize citizen complaints regarding disrespectful and unlawful traffic stops by implementing procedurally just policing. Furthermore, since the available literature suggests that procedural justice encourages compliance and the present researcher observed that the experimental drivers were more likely to comply with police orders than the controls, the TNP could also apply the basic tenets of procedural justice during different types of police-citizen interactions where they urgently need compliance such as in the context of public demonstrations, interrogations, or searches.

Findings of this research can also be utilized while designing policies for specific police practices. Prior research on procedural justice has tested the procedurally just encounters' effect on the global level of police legitimacy. The present study did not consider all the police units as being the same, and focused on a specific police unit and a specific type of police citizen encounter. Specifically, the research findings can be used while developing new traffic enforcement strategies. For example, the literature suggests that citizens' are concerned about racial-ethnic profiling, and discriminatory policing during traffic stops, and such negative perceptions undermine the legitimacy of the police. This research suggests that such negative perceptions can be avoided and the

legitimacy of the encounters can be enhanced if the motives behind the traffic enforcement practices are shared and reasons for the stop provided.

On the other hand, police practitioners should also take the police subculture into account when they decide to implement procedurally just policing. Some officers may simply resist new police initiatives, and as noted in the descriptive and contextual analysis section, some may not like the idea of being respectful to citizens or providing explanation for their actions. Therefore, in order to implement procedurally just policing effectively, officers who are following basic tenets of procedural justice during their interactions with citizens should be encouraged and rewarded, and accountability mechanisms should be established.

The present study also shows that procedurally just policing encounters can be implemented easily and cheaply. This approach does not require a vast monetary investment; rather it requires a minimal amount of supervisory effort and direction. Police administrators and commanders can implement the process-based approach simply by training their officers about procedural justice, holding them accountable for their actions, telling them to be nice towards citizens, requiring them to explain their actions and asking them to give a voice to citizens during interactions.

Despite the informative statement included in the script explaining that procedures are the same for everyone and police do not favor certain one individual over another, the experimental intervention did not enhance citizens' confidence in their beliefs about police fairness-neutrality. As already noted, the police could possibly gain the citizens' trust more effectively by treating everyone the same (i.e., basing their

ticketing decisions on behaviors rather than who someone may have status). Police officers must make an extra effort during traffic stops to ensure that drivers understand that they do not favor certain people, and treat everyone the same way. Therefore, to enhance citizen trust in the police in Turkey, TNP officials should expend an extensive effort to alter the citizens' perceptions of inequality and injustice that originate from favoritism.

6.3 Limitations

As with any study, the present study has some limitations. First, this research was conducted during routine speeding enforcement operations, which is only one type of encounter setting. Generalizing the results of this study to other encounter settings could be questionable, given the broad variations in routine police-citizen encounters. Since all police citizen encounters are not traffic related, the study findings might not provide a complete picture about the nature of police citizen interactions in non-traffic encounters.

Second, the survey used in this study did not contain an item that directly measures compliance, which is another limitation of this study. In their Queensland Community Engagement Trial study, Mazerolle and her colleagues (2013) used a specific question to measure compliance asking citizens' agreement with the statement, "I did as I was told by the police officer." The researcher anticipated that drivers might not respond to such a question honestly because of the timing of the survey. Since drivers were requested to participate in the survey right after the stop in this study, they might have been afraid of encountering legal consequences if reporting their non-compliance during the stop.

Third, some drivers found the timing of the survey “meaningful” and asked the surveyors whether they were police officers. As already noted, drivers were approached right after the stop was completed. They were informed that the surveyors were not police officers. However, we do not know whether these statements convinced them. Thus, if some drivers were not convinced, this might have affected their answers, and might have caused some over reporting or underreporting problems. However, if their perceptions of the police were underreported or over reported, drivers in both groups probably did this. In other words, if the responses were affected, these probably affected both groups to a similar degree. Nevertheless, it is believed that there is a low likelihood of response bias related to the timing of the survey and this would not have a dramatic impact on the study’s conclusions.

Fourth, the researcher acknowledges that allocating the assignment of the police officers to randomized conditions potentially limited the researcher’s ability to fully ensure the proper implementation of the random assignment. Ideally, the researcher should have carried out the randomization. However, as already mentioned, the researcher was not allowed to carry out the randomization due to departmental policies and practical difficulties. Thus, necessary measures were taken and officers were closely monitored to insure that the cases were properly randomized.

Finally, the study was limited by the short encounter time. Usually, drivers who are stopped for traffic violations do not want to spend much time at the checkpoint and want to continue their trip as quickly as they can. Therefore, the researcher kept the script very short so that while reading the script fewer drivers would interrupt the officer by

stating that they do not have time to listen. Clearly, this limited the researcher's ability to use a more comprehensive script that covers all aspects of procedural justice.

6.4 Recommendations for Future Research

This research demonstrated that citizens' perceptions of the police in relation to a traffic encounter could be enhanced through procedurally just policing. However, more empirical research on this topic needs to be conducted to better understand the association between procedural justice and citizen perceptions of the police. Thus, there are some suggestions for future research.

First, future research should investigate the effectiveness of procedurally just policing in different police-citizen interactions. Traffic enforcement does not only involve speeding stops and traffic police also conduct operations for different traffic offenses, such as DUI or red light violations. Besides, not all police-citizen encounters involve traffic offenses. Police officers also interact with the public for different reasons such as when citizens call for services, when citizens are stopped for suspicious activities, or when investigating a crime. Therefore, future research should examine whether procedurally just policing encounters account for differences in the perceptions of police in different types of police-citizen encounters.

Second, citizens are more likely to perceive speeding stops as legitimate than stops for other traffic offenses, because police use technical devices (such as radar, or video recording systems) to detect and record speeding violations (Engel, 2005). This can be considered as an advantage for this study because if the drivers were not provided with clear evidence of their violations, they would be more likely to believe that they were

singled out. Nevertheless, further research should be done to understand whether citizens' perceptions could be altered through procedural justice in more stressful situations such as arrests, stop and frisk, or in searches of the premises/vehicle.

Third, it is believed that future researchers can develop a better script and stop procedures while operationalizing the key components of procedural justice. In order to do that, practitioners' opinions should be taken into account if this will not violate the basic principles of the experiment. Since officers will be the ones who deliver the experimental condition, researchers should work closely with the key police personnel in the process of developing new procedures and elicit practitioners' ideas for how key elements of procedural justice can easily be incorporated into police work. Police officers may suggest alternative ways to operationalize the procedural justice ingredients based on their experiences.

Fourth, instrumental judgments (fair distribution of police services, performance and deterrence) might also be important to people in their evaluations of the police. Because of the differences between the eastern and western cultures, instrumental aspects of police behavior may also have a strong impact in shaping police legitimacy in Turkey. Thus, when evaluating views about police legitimacy, future research in Turkey should also include instrumental evaluations to examine whether procedural justice shapes citizens' perceptions of police in Turkey more so than instrumental factors.

Fifth, another important task for future research is to find a way to measure immediate citizen reaction to experimental intervention. As already noted, if a citizen was disrespectful towards the officer despite the officer's respectful attitude, potentially, this

might affect the experimental officer's morale and motivation negatively, and ultimately could affect the delivery of the treatment 'dose.' Thus, future research may benefit from adding a measurement item that will allow the researcher to better assess how successfully the procedurally just procedure was delivered.

Sixth, a further study should be done to investigate whether procedurally just policing can have an impact on future speeding behavior. The present study found that citizens' attitudes towards speed enforcement operations could be altered through procedurally just policing. However, reporting more favorable views surrounding speed enforcement operations does not necessarily mean that the driver who received procedurally just encounter will not engage in speeding behaviors in the future. Therefore, a future study with more focus on examining procedurally just encounters' impact on future speeding behavior is suggested.

Finally, in this study, drivers were asked whether they contacted with the police in the last 12 months, but they were not asked whether they perceived their prior contacts as positive or negative. It is believed that preexisting attitudes and prejudices towards police may affect the interpretation of procedurally fair police actions during encounters. Therefore, future research also needs to gather more information regarding individuals' prior contacts, views about the legitimacy of police and vicarious experiences.

6.5 Conclusion

Previous empirical research suggests that procedural justice plays a key role in developing and maintaining police legitimacy (Mazerolle et al., 2013; Sunshine & Tyler, 2003; Tyler, 2006; Tyler & Huo, 2002). It is also suggested that when rules that were

made through fair procedures are implemented fairly, the governing authority could obtain more effective public compliance and cooperation (Beetham, 1991; Skogan & Frydl, 2004; Tyler, 2006). This study has made a meaningful contribution to this body of literature by providing evidence on how procedurally just encounters with police officers changed people's perceptions of police in a short, police initiated encounter in Turkey.

The study findings suggest that the procedurally just policing encounter had a limited impact on the general perceptions of police, whereas it had a substantial impact on encounter specific views and citizen satisfaction. It was found that just a small 'dose' of procedural justice during a police-citizen encounter can produce positive perceptions and positive citizen attitudes towards police. If police will consider these short, yet influential, interactions as an opportunity to develop their relations with citizens, they can change the way citizens think about them. Given the common perception of 'traffic police' as unfriendly and disrespectful, traffic police in Turkey should take advantage of the time spent with the drivers to restore their tarnished image. However, in order to develop and maintain a strong relationship with the public, as well as gaining their trust more generally, procedurally just policing practices should become a routine practice and citizens repeatedly should see that police are following the basic tenets of procedural justice.

The feelings of citizens who engage in encounters with police are affected by the actions of police officers. Therefore, police practitioners should pay special attention to the quality of police citizen interactions. While trying to develop new strategies to improve the quality of police citizen encounters, they should utilize basic tenets of procedural justice. This study suggests that by promoting fairness, respect and

transparency, police behavior and procedures in the context of police-citizen encounters can be improved.

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APPENDICES

Appendix A

Perceptions (General)	Adana Study	Queensland Study
Neutrality-Fairness	Q 4...not issue a traffic ticket to the privileged people	-Police try to be fair when making decisions -Police give people the opportunity to express their views before decisions are made - Police listen to people before making decisions
Satisfaction	Q 2...satisfied with the way police treat citizens	-I am satisfied with the way police do their job
Compliance		-I feel a moral obligation to obey police -Overall, I obey police with good will
Confidence in Police		-I have confidence in police
Trust	Q 1 ...Overall, I trust police	-I trust police
Respect	Q 3. ...police are polite when dealing with people	-Police treat people with dignity and respect -Police are always polite when dealing with people

Perceptions (Specific to Encounter)	Adana Study	Queensland Study
Neutrality- Fairness	Q 7 ...issue a ticket to anyone in my situation...	-The officer was fair when making the decision to stop me -The police officer gave me opportunity to express my views -The police officer listened to me during the RBT
Satisfaction	Q 9...satisfied with police behavior and how I was treated...	-I was satisfied with the way the police officer conducted the RBT
Compliance		-I did as I was told by the police officer
Confidence in Police		-I had confidence that the police officer was doing the right thing
Trust	Q 8 ...officer was trustworthy	-I felt that the police officer was trustworthy
Respect	Q 5. ...officer was polite and treated me with respect	-The police officer treated me with dignity and respect -The police officer was polite when dealing with me
Changed views of speed controls	Q 6 ...stationary speed controls are necessary	-Has your recent RBT experience changed your view on drinking and driving

Appendix B

Procedural Justice Script

- Good morning/afternoon sir/madam. My name is officer _____
- Do you know how we conduct our speed control operations?
.....
- Let me provide you some brief information about speed controls.
- It is one of the most well-enforced traffic controls in Turkey.
- The radar equipment in our patrol car accurately records the car's speed
- We give tickets to all drivers who pass the speed limit we stop for speeding regardless of their socioeconomic and occupational position.
- Our aim is to reduce traffic accidents
- Do you know that approximately 30 percent of traffic accidents in Turkey are related to speeding?
- In Adana alone there were 55 deaths and 5371 injuries in 2011 related to traffic accidents.
- Guess how difficult for us to tell a person that his/her loved one has died or has been seriously injured.
- You can help us reduce these accidents by continually driving carefully and responsibly.
- Do you think we should continue conducting speed controls?
.....
- Today, you have been stopped because our radar equipped patrol car detected that your speed was _____. This speed is clearly above the stated limit of 70 km/h.
- Now, may I have your documents please?
.....
- Thank you. I wish you a safe trip. Please be careful next time. Thank you for your cooperation.

Appendix C**Questionnaire (ENGLISH TRANSLATION)**

DATE: __/ __/ _____

Paper color : () BLUE () WHITE

PART I: *Please indicate how much you agree or disagree with the following statements?***1. Overall, I trust police**

- () Strongly agree
- () Somewhat agree
- () Neither agree or disagree
- () Somewhat disagree
- () Strongly disagree

2. I am satisfied with the way police treat citizens

- () Strongly agree
- () Somewhat agree
- () Neither agree or disagree
- () Somewhat disagree
- () Strongly disagree

3. Overall, police are polite when dealing with people

- () Strongly agree
- () Somewhat agree
- () Neither agree or disagree
- () Somewhat disagree
- () Strongly disagree

4. Police could not or would not issue a traffic ticket to the privileged people

- () Strongly agree
- () Somewhat agree
- () Neither agree or disagree
- () Somewhat disagree
- () Strongly disagree

PART 2: *During this speed control;***5. The police officer was polite and treated me with respect**

- () Strongly agree
- () Somewhat agree
- () Neither agree or disagree
- () Somewhat disagree
- () Strongly disagree

6. Despite the outcome (speeding ticket), I think that stationary speed controls are necessary

- Strongly agree
- Somewhat agree
- Neither agree or disagree
- Somewhat disagree
- Strongly disagree

7. I felt the police officer would do the same and issue a ticket to anyone in my situation irrespective of his/her status

- Strongly agree
- Somewhat agree
- Neither agree or disagree
- Somewhat disagree
- Strongly disagree

8. I felt that the police officer was trustworthy

- Strongly agree
- Somewhat agree
- Neither agree or disagree
- Somewhat disagree
- Strongly disagree

9. Overall, I was satisfied with police behavior and how I was treated during this encounter

- (1) Strongly Agree
- (2) Somewhat Agree
- (3) Neither agree/disagree
- (4) Somewhat disagree
- (5) Strongly Disagree

PART 3: About yourself

10. Gender?

- Male Female

11. Did you have any contacts with police in the last 12 months?

- Yes No

12. Other than today, what is the total number of demerit points that you have accumulated within last year?

_____points

- No points
- I do not know

13. Occupation?

14. What is your highest educational achievement?

- High School or less
- College, University or Graduate Level

15. Monthly income?

- less than 2000 TL
- more than 2000 TL

16. Do any member of your relatives or close friends work in the police service?

- No
- Your spouse, son, daughter, father, mother
- Close relative (mother, uncle, aunt)
- Close friend

17. What is your age?

18. The district you live in?

 (Specify)**19. Would like to share any other comments or ideas about your encounter today?**

Appendix D:

Comparison of demographic data between the experimental and control drivers

Characteristics	Experimental		Control	
	Survey Respondents (n=254)	All exp. Drivers (n=301)	Survey Respondents (n=246)	All cont. drivers (n=355)
Gender				
Male	224	268	218	346
Female	30	34	28	47
Mean Age	35.81	36.30	37.01	37.20
Mean Demerit Points	5.35	5.76	7.38	6.66
Place of Birth				
Adana	155	183	152	224
Adiyaman	6	8	6	6
Diyarbakir	2	2	3	4
Elazig	2	3	2	3
Gaziantep	1	3	4	6
Hatay	7	7	6	11
Mersin	7	9	9	17
Istanbul	0	2	3	4
Kayseri	7	7	2	3
Malatya	6	6	4	5
Kahramanmaras	7	7	2	5
Mardin	6	7	5	8
Nigde	2	4	2	5
Siirt	3	3	2	2
Sanliurfa	2	6	3	4
Osmaniye	8	9	11	14
Other	33	35	30	34

Reasons for rejection:

<i>Reason</i>	<i>Control</i>	<i>Experimental</i>
<i>Rejected Politely</i>	10	7
<i>Driver did not have time to answer</i>	17	8
<i>Rejected without giving a reason</i>	23	6
<i>Rejected in an aggressive manner</i>	17	10
<i>Resisted-argued with police</i>	8	1
<i>Rejected because of the traffic ticket</i>	5	15

Appendix E:

Oral Consent Script

Hello my name is Nusret Sahin and I am a PhD student at Rutgers University, which is located in New Jersey, United States. I am conducting a study on the nature of police-citizen encounters. The purpose of this research is to understand the factors that determine on the citizen satisfaction with the police. The study procedures include completion of a questionnaire. It will last four to five minutes. Your participation in this research study is completely voluntary. You may choose not to participate. Therefore, I am asking if you would like me to read you the consent document?

The information you provide will only be used in the study and will remain strictly anonymous, which means that I will record no information that could identify you. We will not share any information you provided with the police. You have the right to withdraw your consent at any time without penalty.

If you have any questions or concerns you may call me, Prof. Braga or Rutgers University Institutional Review Board from the phone numbers below. You will be given a copy of this consent form for your records.

If you agree to participate, would it be okay to begin with my questions?

Researcher (Nusret Sahin): +90 531 239 5113

Professor Anthony Braga: +1 (973) 353-5923

The Sponsored Programs Administrator at Rutgers University:

Rutgers University Institutional Review Board for the Protection of Human Subjects
Office of Research and Sponsored Programs 3 Rutgers Plaza New Brunswick, NJ
08901-8559

Tel: +1 (848) 932 4058

Email: humansubjects@orsp.rutgers.edu

Appendix F:

Correlation Matrices

Correlations Among Variables: Polychoric Correlation matrix (N=481)

Variable	1	2	3	4	5	6	7	8	9
1. Trust-General	1								
2. Satisfaction-General	0.8	1							
3. Respect-General	0.71	0.88	1						
4. Fairness/Neutrality-General	0.41	0.29	0.27	1					
5. Respect-Encounter	0.42	0.46	0.45	0.13	1				
6. Perceptions SCO-Encounter	0.44	0.46	0.41	0.13	0.48	1			
7. Fairness/Neutrality-Encounter	0.58	0.58	0.47	0.64	0.34	0.48	1		
8. Trust-Encounter	0.54	0.51	0.52	0.3	0.7	0.55	0.52	1	
9. Satisfaction-Encounter	0.49	0.51	0.45	0.18	0.69	0.51	0.49	0.82	1

Correlations Among Variables: Pearson's r Correlation matrix (N=481)

Variable	1	2	3	4	5	6	7	8	9
1. Trust-General	1								
2. Satisfaction-General	0.71*	1							
3. Respect-General	0.61*	0.83*	1						
4. Fairness/Neutrality-General	0.29*	0.22*	0.19*	1					
5. Respect-Encounter	0.33*	0.36*	0.33*	0.09*	1				
6. Perceptions SCO-Encounter	0.32*	0.34*	0.30*	0.07	0.32*	1			
7. Fairness/Neutrality-Encounter	0.44*	0.45*	0.35*	0.47*	0.22*	0.31*	1		
8. Trust-Encounter	0.42*	0.42*	0.42*	0.18*	0.54*	0.39*	0.35*	1	
9. Satisfaction-Encounter	0.42*	0.43*	0.38*	0.13*	0.56*	0.38*	0.37*	0.72*	1

* $p < .05$

Appendix G

*Factor Loadings for Items Measuring Perceptions of Procedural Justice**

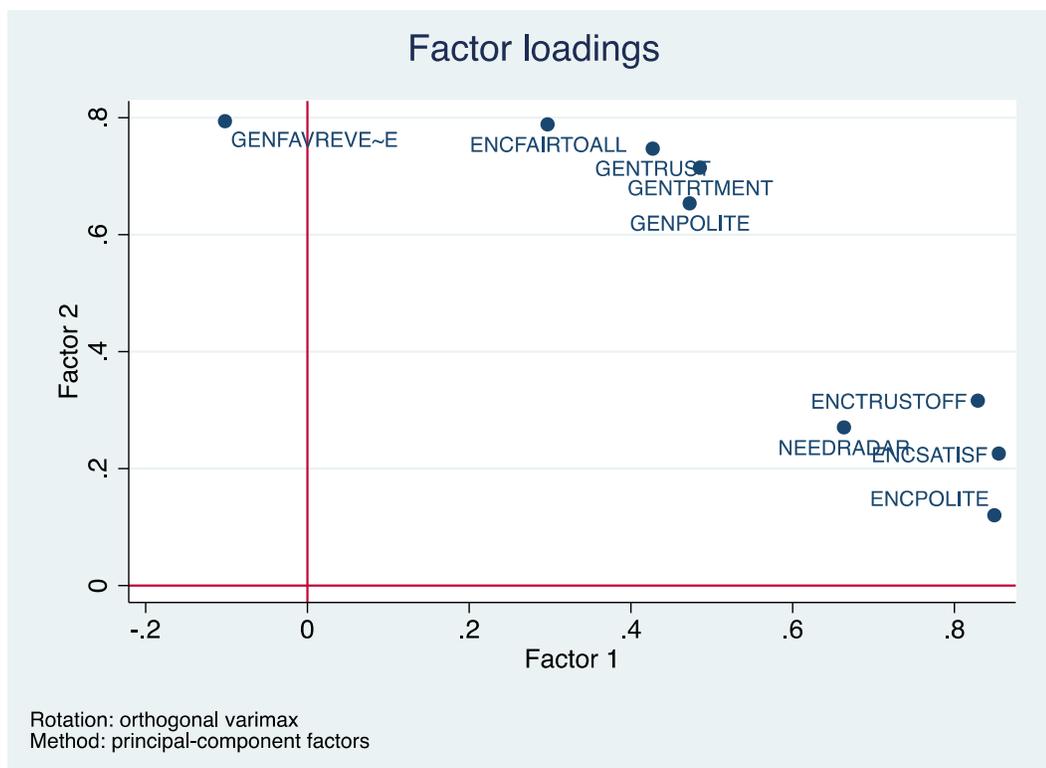
Item No	Items	Component	
		1	2
5	The police officer was polite and treated me with respect	0.850	0.104
6	Despite the outcome (speeding ticket), I think that stationary speed controls are necessary	0.668	0.257
8	I felt the police officer would do the same and issue a ticket to anyone in my situation irrespective of his/her status	0.835	0.300
9	Overall, I was satisfied with police behavior and how I was treated during this encounter	0.859	0.208
1	Overall, I trust police	0.440	0.738
2	I am satisfied with the way police treat citizens	0.499	0.704
3	Overall, police are polite when dealing with people	0.485	0.644
4	Police could not or would not issue a traffic ticket to the privileged people (R)	-0.086	0.795
7	I felt the police officer would do the same and issue a ticket to anyone in my situation irrespective of his/her status	0.3124	0.781

* Rotation Method: Varimax with Kaiser Normalization

*Factor score coefficients***

Items	Factor 1	Factor 2
Item 1	-0.01352	0.26231
Item 2	0.02269	0.22747
Item 3	0.03378	0.19972
Item 4	-0.26869	0.44444
Item 5	0.35562	-0.19098
Item 6	0.22843	-0.05734
Item 7	-0.08417	0.32220
Item 8	0.29131	-0.08247
Item 9	0.32860	-0.13775

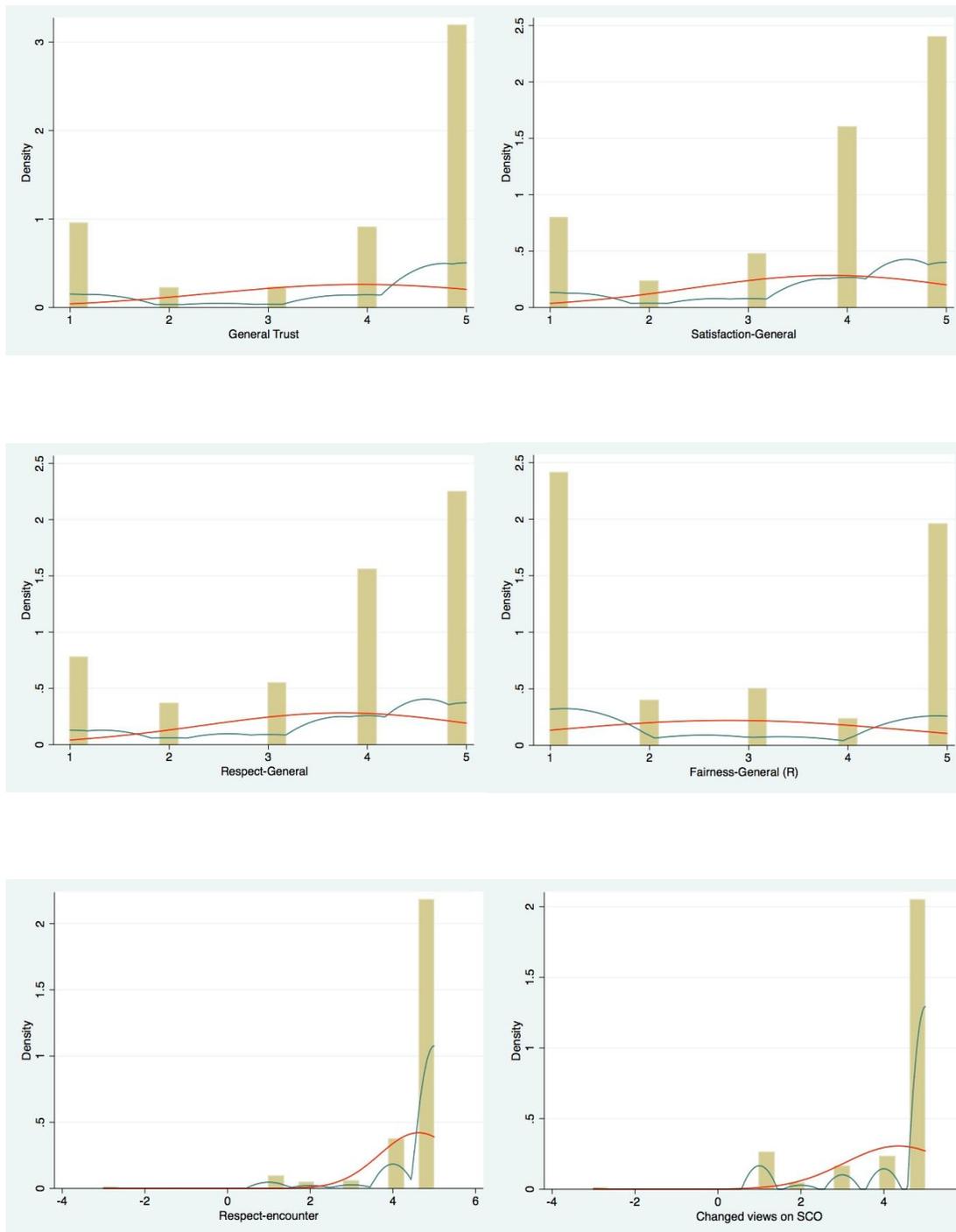
** The table shows the coefficients by which items are multiplied to obtain factor scores.

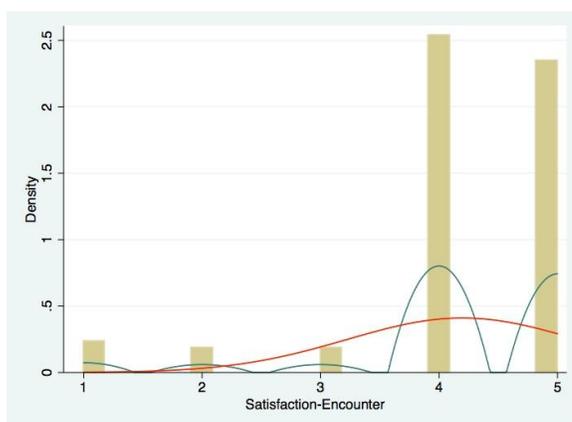
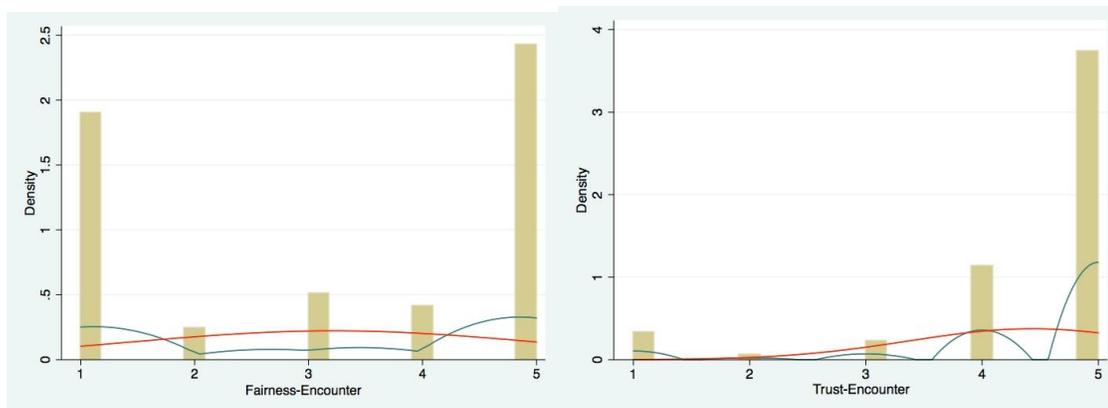
*Post-factor-analysis Graph****

*** The graph visualize the distribution of Factor Loadings for Items Measuring Perceptions of Procedural Justice

Appendix H:

Histograms of the ordinal dependent variables



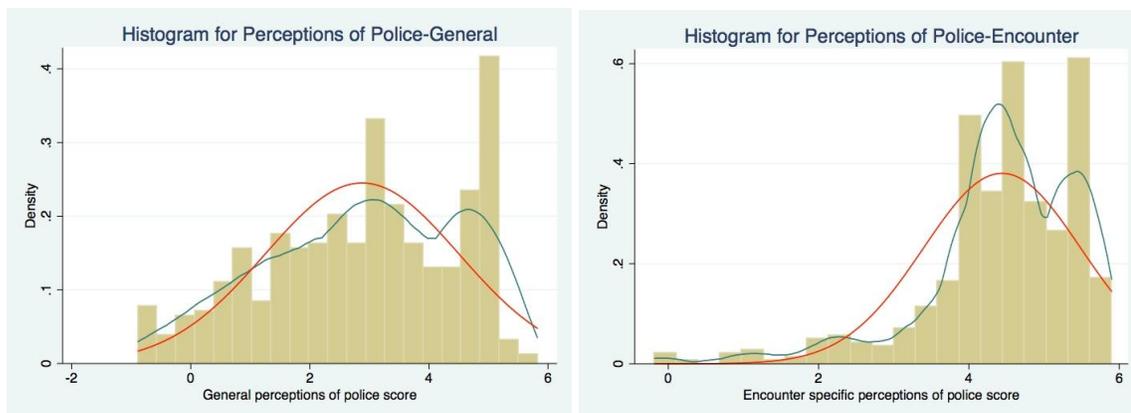


*Red line represents normal-density plot, which gives how a normal distribution would look right on top of the histogram

**Green curve represents kernel density plot, which is an estimate of the most likely population distribution (it smooth out some of the bars that are extremely high or low).

Appendix I:

Histograms of latent variables



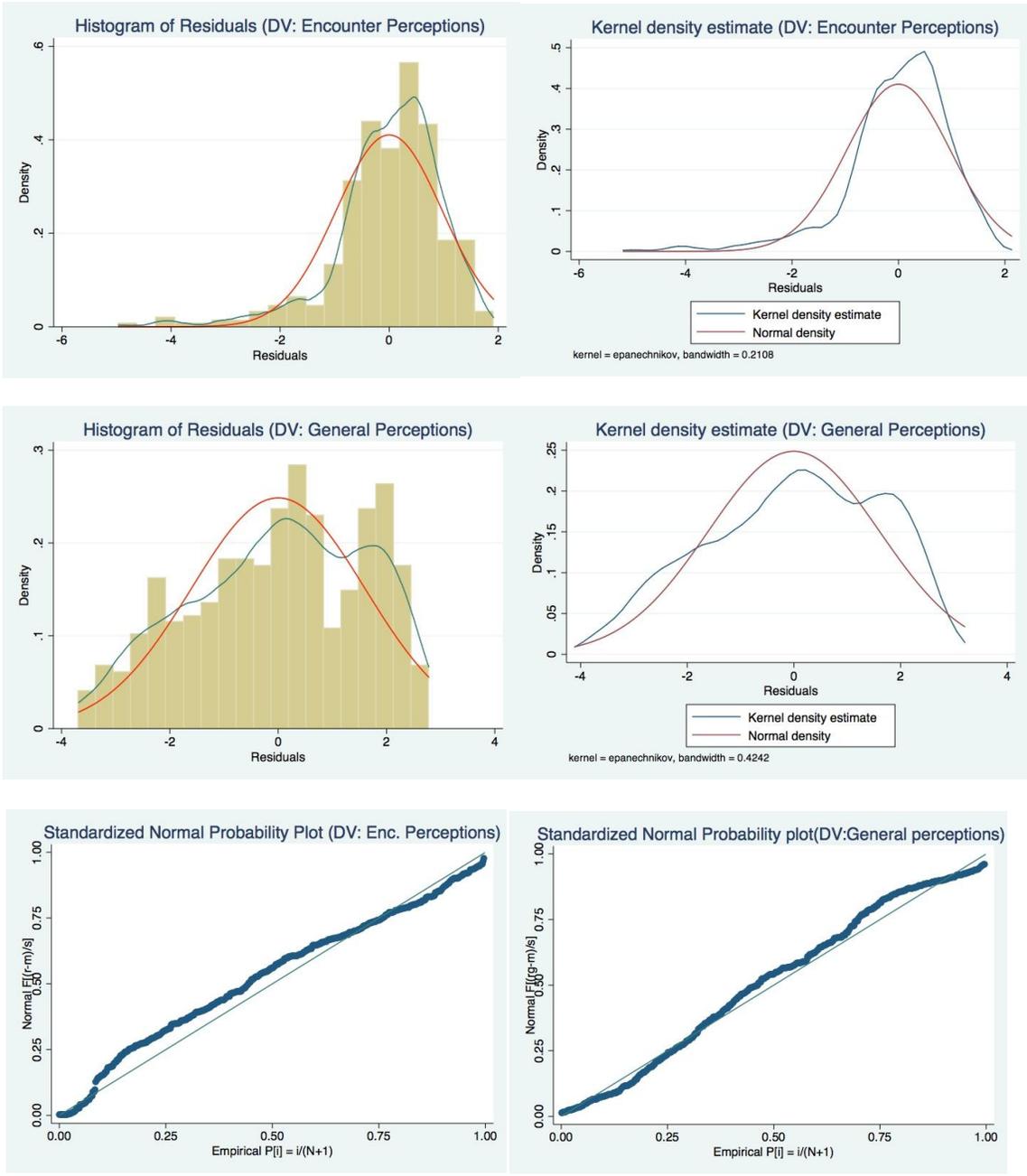
Appendix J:**VIF table for multicollienarity**

Variable	VIF	1/VIF (tolerance)
Education	1.33	0.7500
Income	1.27	0.7857
Gender	1.09	0.9135
Age	1.05	0.9555
Experimental Condition	1.04	0.9570
Having a police relative or close friend	1.04	0.9586
Demerit Points	1.03	0.9702
Violation Type	1.03	0.9743

Mean VIF: 1.11

Appendix K:

Testing for Normality



*Red line represents normal-density plot, which gives how a normal distribution would look right on top of the histogram

**Green curve represents kernel density plot, which is an estimate of the most likely population distribution

Stata Output for IQR statistics: General Perceptions (DV)

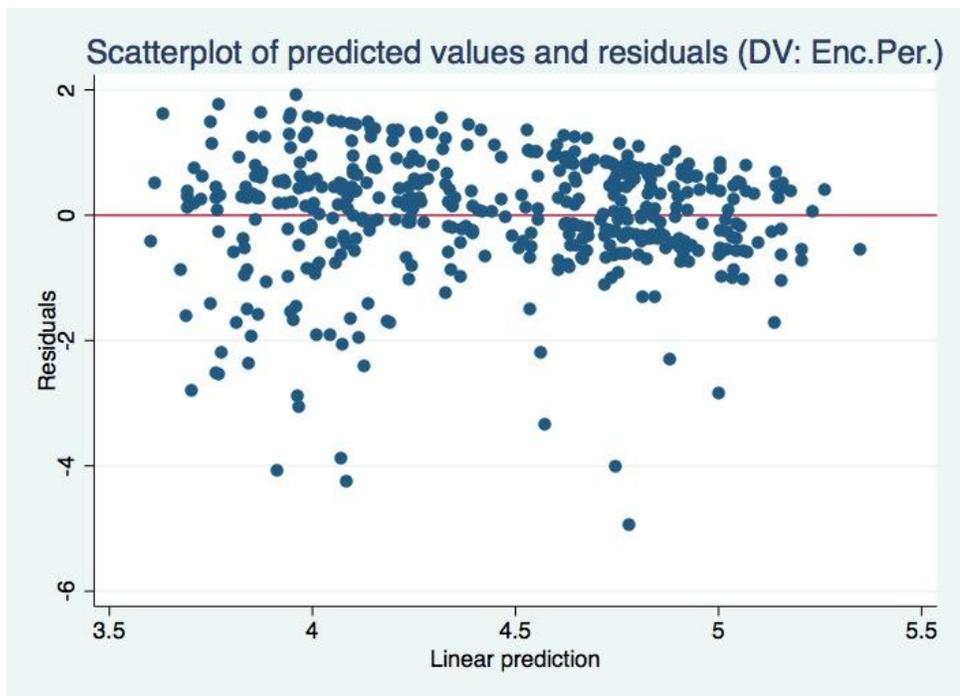
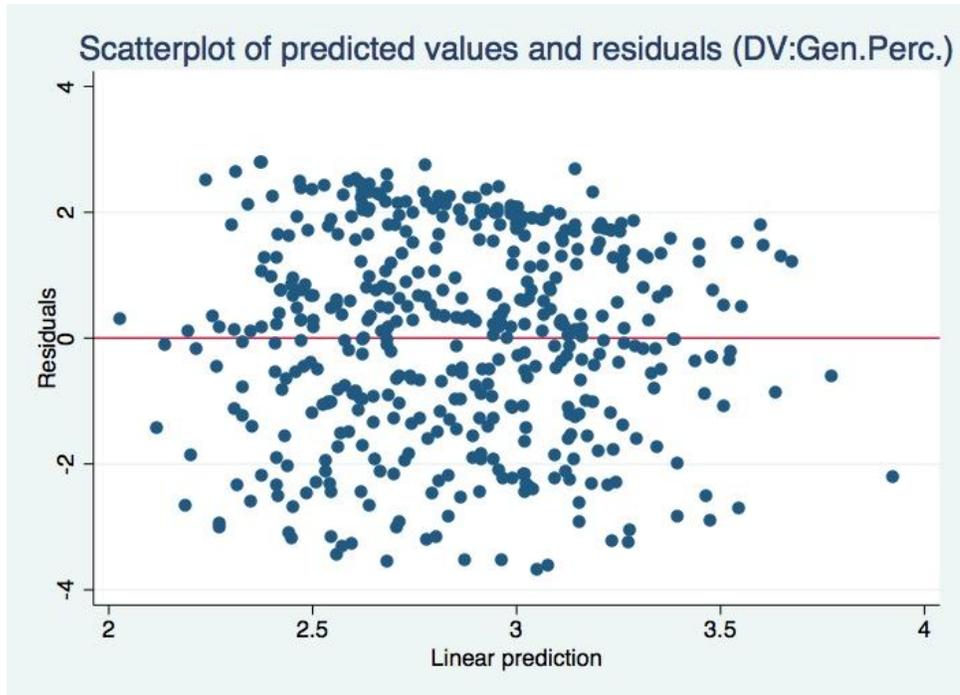
mean=	2.3e-09	std.dev.=	1.605	(n=	458)
median=	.1591	pseudo std.dev.=	1.905	(IQR=	2.57)
10 trim=	.0699				
				low	high

	inner fences			-5.024	5.255
	# mild outliers			0	0
	% mild outliers			0.00%	0.00%
	outer fences			-8.879	9.11
	# severe outliers			0	0
	% severe outliers			0.00%	0.00%

Stata Output for IQR statistics: Encounter Perceptions (DV)

mean=	-1.3e-09	std.dev.=	.9718	(n=	458)
median=	.1393	pseudo std.dev.=	.7977	(IQR=	1.076)
10 trim=	.0949				
				low	high

	inner fences			-2.066	2.238
	# mild outliers			13	0
	% mild outliers			2.84%	0.00%
	outer fences			-3.68	3.852
	# severe outliers			5	0
	% severe outliers			1.09%	0.00%

Appendix L:**Testing for Homoskedasticity**

CURRICULUM VITAE

AREAS OF SPECIALIZATION

Corruption

Police Misconduct

Police Technology

Counter Terrorism

HIGHER EDUCATION

Faculty of Security Sciences, Ankara 1999-2003 B.A. Civil Law & Social Psychology

Institute of Security Sciences, Ankara 2007-2010 M.A. International Security

John Jay College 2008-2010 M.A. Criminal Justice

Rutgers University 2010-2012 M.A. Criminal Justice

TEACHING

Undergraduate (Rutgers University):

Police and Society: Summer 2011, Winter 2014

Introduction to Criminal Justice: Spring 2012, Fall 2012, Spring 2013, Summer 2013

White Collar Crime: Summer 2012

PRESENTATIONS

“The Impact of In-Car Cameras on the Complaints about Police Use of Force,” American Society of Criminology, Chicago, IL, November, 2012

“Legitimacy, Procedural Justice, and Police-Citizen Encounters: A Randomized Controlled Trial of the Impact of Procedural Justice on Citizen Perceptions of the Police during Traffic Stops in Turkey,” American Society of Criminology, Atlanta, GA, November, 2013

ADDITIONAL INFORMATION

John Jay College, 2010, M.A. Certificate Program in Terrorism Studies

John Jay College, 2010, Thesis (M.A.): *Reducing Police Corruption: The use of Technology to Reduce Police Corruption*

Institute of Security Sciences, 2010, Thesis (M.A.): *Hrant Dink Assassination: The Analysis of Media News Before and in the Aftermath of the Assassination*

Research Assistant, The Police Institute, Rutgers University, 2012-2013